The National Locksmith

The National Locksmith®

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January 1996
Volume 67, No. 1

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GM S000-999
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Stellar Profits with Electric Strikes!

also this month...

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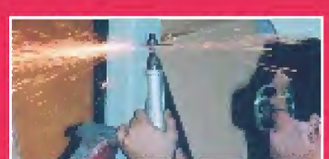

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Your Vote Counts!
Reader's Choice Awards
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On The Cover

The power of profit is wrapped up in going electric! Featured on the cover in clockwise order from top are HES, Trine and Rutherford electric strikes.

Click on the article you wish to read

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Commentary

Marc Goldberg
Editor/Publisher

Good news and bad news.

This month I have two pieces of good news and one of bad news to report. First the bad news. Managing Editor Tom Seroogy, an important member of *The National Locksmith* team for three years, is leaving the magazine. I consider that to be bad news because Tom has been instrumental in making the magazine the number one trade book in the industry. He's a hell of a guy and I will miss his presence in the office sorely. (Ok, maybe I won't miss all those practical jokes but I will miss Tom!)

The first piece of good news is that Tom is by no means leaving the locksmith industry. He will be working for STRATTEC in the role of Aftermarket Product Manager. We'll be seeing him at conventions and we wish him all the best, along with his family.

The second piece of good news is that Tom Seroogy will be succeeded in the job of Managing Editor by none other than Greg Mango, formerly of *Reed's Security Reporter.* Greg's credentials are impeccable and his editorial standards are extremely high. We're pleased to have Greg aboard with *The National Locksmith.* You'll be hearing from him in next month's issue.

By the way, Bill Reed and Steve Young will be putting on a seminar in Fort Lauderdale, FL on February 25th. For more information see the Calendar of Events section.

In another note, now is a great time for you to join the National Safeman's Organization (NSO). Director Dave McOmie has been hard at work getting great discounts from various companies for NSO members. It's more than possible that these discounts could save you back far more than your membership fee. So if you've been thinking you'd like to make more money in the safe service field, you'll want to hop on board the NSO Express!

Now is also a good time to mention that Mark Bates of MBA Co. has authored our latest safe book called *Modern Safe Locks.* This book details service procedures for over 100 combinations locks including mechanical, key-op and electronic. Mark's book not only is invaluable for the veteran, but also for the locksmith who wishes to get started in safe profits by changing combinations and making service calls.

From the staff at *The National Locksmith*, our best wishes for the health, happiness and prosperity of you and your loved ones.

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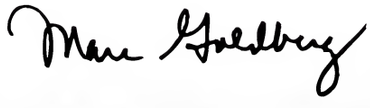

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Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

Problems With Millenia

I just read another locksmith publication on the Mazda Millenia and they said that the key codes for that car are the same as the Lexus and have not been published. They also said that is was possible to impression the car and that a company in Tulsa made space and depth keys for it. I didn't think that was possible. What's the deal, didn't *The National Locksmith* do an article on the Millenia awhile back.

Rick Arguello
Nebraska

Editor's Note: Yes, Rick, *The National Locksmith* did write an article on the Millenia and we have also published the codes. To further answer your questions, however, I contacted Michael Hyde, automotive technical writer.

Rick,

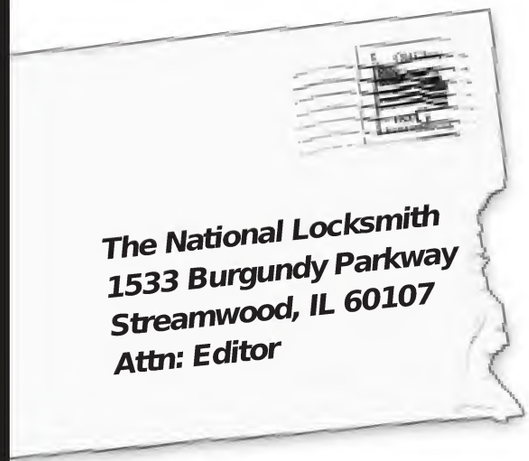
I did an article on the Mazda Millenia in the February 1995 issue of *The National Locksmith*. Let me answer some of your concerns.

First, the codes for the Millenia and the Lexus are different. The code series for Lexus vehicles is O 0001-5000. The code series for the Mazda Millenia is 20000-21200. The two series are not interchangeable, although the locks, keys, tumblers and codes are created by the same subcontractor, called Tokai-Rika. The code series for the Mazda Millenia was published by the *The National Locksmith* the same month I did the article on the locks.

It should also be noted that the MACS is 2 for all positions except on a valet. On the valet it is possible to have a 5 depth next to a 2 depth in positions 7R and 8R from the bow. Plus, the number 1 depth (deepest depth) only appears in the fourth position from the bow in the Lexus code series and in the first four positions from the bow in the Millenia code series; if a number one depth appears at all.

I read the article you referenced in your letter. I believe it is not prudent to suggest impressioning Millenia locks, but I do not fault the author. He did leave it as a last chance alternative.

As far as Guide keys are concerned I only know of one company that sells Guide keys for this type of lock system, that I have tried and that work effectively. The are sold through MB Key in California, they can be reached at (310) 699-0060. I hope this answers your questions and feel free to contact us again if we can be of assistance to you.



No Degree For Me

I have really had it with all you so-called scholars out there, i.e. the elite who insist on pushing this "training" down our throats. Do you sincerely believe by adding a few letters (CML, CPL, RL, etc.) after your name it actually elevates your status as a locksmith? Perhaps, in some quarters, such as when your local organization meets and you sit around telling war stories, bragging about your accomplishments. Frankly, I don't think it means a damn thing to an account who merely wants good work performed and could care less whether or not I can visually distinguish between a Best or Falcon keyway. Am I missing something here?

What business is it of anyone, especially those in the business, whether I attend training seminars? What business is it of anyone if I decide I don't need any fancy letters attached to my name?

As for my not belonging to a locksmith organization, local or national, I've been there. I now abstain from them all and could bore you for hours listing the reasons why.

Am I against training for those that wish to go that route? Not at all. I personally attended Lockmasters (class of '81) for a full three weeks while they were teaching "on the beach." The knowledge I gained regarding safes paid for this training 10 times over. I also was taught by whom I consider the best instructor I

Continued on page 8

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ever had the pleasure of meeting, Speedy Chandler.

In closing, I must add there are very few things in life more satisfying than correcting mistakes created by a locksmith with all those fancy letters attached to his/her name.

Jack
E Mail

Spline Key Extractor

A funny thing happened to me the other day, I was working on a Mosler safe with the round spline and the double prong. The safe had not been serviced in a very, very long time. Since it was the round kind of spline, I thought I would use my jiffy decapper to get a good grip on the spline. I broke the spline key right in half. Boy, was I in for a good time. I walked to my van to get my drill bit set so I could at least unscrew the drive cam. When I got back, someone had closed the safe; just when I had my spline key extractor in my hand, the one with the tiny suction cups. I think every locksmith should have one in their tool box! Well, I never got to use the extractor, but I did get to use the drill.

Would you believe that the whole thing got started because the drive cam wasn't seated properly and the lady was saying that the dial was hard to turn.

Moral of the story is keep your spline key extractor on you at all times.

Eric Delvalle
E Mail

Warning

I have some very important information that must be passed on to all in our industry. I was called to make keys for a stolen car that was recovered by the local police and impounded at a body shop.

The car was used by drug users, and had needles, spoons, leather belts, all over the inside of the car. The local drug users have in the past, broken used needles into the seats and backrests, in hopes to cause injury to the police. This car was marked as a bio-hazard by the police. The only thing on my mind was to do my job and make keys to the car. Because it was a GM, I would have had to sit in the driver's seat to remove the steering wheel to make the ignition keys. If the car had not been marked as a hazard, and if the car had been cleaned out, I would not have given it a second thought of a life threatening hazard that someone might have broken needles into the seats.

Please pass this warning on, that this could happen to any locksmith just trying to do their job.

Rodney B. Cobb
Washington

Good Job

Just thought I would drop you a line and say that I think you all do the locksmith industry right. I really enjoy your magazine and find the articles/tech info extremely informative. Keep up the good work!

Boe Franklin
E Mail

Life Saver

I recently ran into a situation where I desperately needed a replacement profile cylinder for an unusual door on a multi-million dollar residence. A number of calls to my usual distributors confirmed my fear that this cylinder was not going to be easy to find.

I dug out my copy of the 1995 T*he National Locksmith* Directory and began selecting manufacturers and distributors who handled unusual locks. I called three companies from my list and hit paydirt on one of the three.

The reason I'm writing to you is to let you know that the directory is a life saver and also to let other locksmith know about the people out there who are willing to help them. Scott at DiMark International and Gina at Dave Saunders & Co. tried very hard to locate the cylinder I needed, but could not locate anything that large.

Lynn at Hardware Technologies Ltd. in Wisconsin saved the day. She had me fax a sketch which she then compared to diagrams in their files and faxed me copies so I could select the correct model. The cylinder was made in Germany and comes in seven different sizes and configurations - they had the one I needed in stock!

The thing which makes all this worth mentioning is the amount of effort these people put out to help me locate a lock worth about $25. they were helpful, polite, and cheerful even though they knew I was not a regular customer and I was not spending a large sum of money. I hope that we can all take a moment to recognize people who go the extra mile for us - it is not too common in today's hectic world.

Brian O'Toole
New York

Auto Electronics

The automotive engineers have, in my opinion, made a mistake in thinking as regards the new electronics.

Their mistake is this: People want "cheap" and "easily duplicated" keys. I believe the people do not want costly keys that are scarce to the point that they can only be found at the dealers. Or by hunting all over town.

The electrical engineers "embrace" high technology and are enthralled when they can find another application for its use. And, they do not concern themselves with the "after market" cost of such things as the cost of a key, nor the customer's difficulty in obtaining one.

If there were not another way to give the same level of security, I might agree with VATS and the other systems. But it amazes me that GM first changed the steering columns to plastic, then initiated VATS to prevent theft from thieves "cracking" those same plastic columns and by-passing the locking system that, by the way, was doing it's job. Simply amazing!

The fact that one company has made no small amount of money by putting out a product that is a steel "wrap around" for a GM steering column, lends substance to what I believe is a short sighted vision by the automotive engineers. If we take GM as an example, we can easily see that the locking system was about as secure as was needed to secure the car, providing, they put a metal column back on the car.

We now seem to be entering into a race by the automotive engineers who are determined to have a better technology than their competition.

Perhaps I'm becoming a fossil, but it does seem to me that what is being done is the expensive way to solve a marginal problem ...and one that could have been done in a better way, from the consumers standpoint.

Now I guess I'd better duck, because I know what I've said won't be popular.

Don Mowery
E Mail

TNL

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Reed Report

Bill Reed

Scatter Shooting while wondering whatever happened to... J. Flynn

- I was real happy to see in a recent ALOA's Keynote magazine great coverage on automotive security. It's truly amazing how many locksmiths have stopped doing it or never have done it because it is "too complicated." Being complicated should only get your attention. The more complicated, the more money. I've said it before, and I'll say it again - the big bucks are in automotive and electronic security. A recent survey I made points this out completely. I'll be reporting these results in my keynote addresses throughout the year. I'll also discuss it in my seminars. High security automotive offers tremendous opportunities to make more money. Cars like Lexus, Mazda, Millenia, Mercedes, Infiniti, and others are jobs that your "average" person can't do. Don't be average - be aggressive. Learn to work on these and watch your company grow. Remember, good service is one thing the mass merchandisers can't offer. This is where we'll beat up on them.

- Speaking of mass merchandisers - there is a major lock manufacturer offering builders who commit to thirty homes for all hardware to get back five homes completely FREE. Yes, that's complete hardware on all doors, in and out, FREE. And the beat goes on.

- Heard a rumor that ASSA Abloy has bought ESSEX. Well, the rumor has been confirmed. Joining the ASSA group through the purchase are Sargent, McKinney, and Curries and Graham. Bunch of these rumors going on around the industry. I'll report on others next month.

- Congratulations to Acme Wholesale. They recently opened a new branch in Dallas. Their branch in Ft. Worth will remain, so now they really have the entire Metroplex covered. Acme, of course, is part of the LSDA group. I might add that the LSDA headquarters is in Grapevine, Texas. Where's Grapevine? If you fly into DFW Airport, you're there. Much of the airport is within the Grapevine boundaries.

- I've gotten a lot of calls lately for the spacings and depths for a 15 passenger minibus using a Kabota key - that's Ilco 1540, H series: Here they are: Depths - Tip to Bow:

  #1 .270 #2 .250 #3 .230 #4 .210

  Spacing from shoulder to the center of the first cut is .100. Cut to cut is .095. There are five spaces and the key is cut on one side only.

- Locksmiths have also been calling about problems on the ignition locks in the 1992 Buick Skylark. Oldsmobile Achieva and the Grand Am. This is a double sided wafer lock with sidebar. The problem is the key is hard, or impossible, to remove. The problem can be solved by adjusting the interlock cable.

- The Greater Chicago Locksmith Association has set their Midwest Trade Show for March 23, 1996. It will be held at the Olympia Plaza Hotel at 4141 Calumet Avenue, Hammond, Indiana. This is one of the best 'local' shows, so all should plan to attend.

Yours For Better Security,

Bill Reed

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VIEWPOINT:
What Do You Mean - "We!"

by **Tony Harris, CML, CCL**

When it comes to legislation, what are you doing besides writing a letter to the editor?

I just finished reading Art Kambeitz's letter in the September 1995 issue of *The National Locksmith* and as an informed California Locksmith I just had to reply.

Almost every month there is a letter to the Editor in one of the locksmithing magazines concerning laws in California that relate to locksmiths. Unfortunately at least half the time their facts are incorrect and their letter tends to spread those incorrect facts around. "I read in the _____that all locksmiths will be _____ by the State of California." These letters usually close with, "WE should do something about this." My question is what are they doing besides writing a letter to the editor?

First, do any of these locksmith belong to any locksmith associations, state or national? I'll bet the answer is NO! If they did belong to their state association they would know the truth about what is going on with their state's efforts to pass laws relating to locksmithing. Our state association, the California Locksmith's Association, has a Legislation Committee that keeps track of what proposed legislation is coming up for a vote. Our association supports laws which benefit us and oppose laws that may hurt us. Our members are informed of pending laws so that they may write their state representatives in support or opposition to a proposed law.

Mr. Kambeitz states, "...a door of control has been opened to allow the alarm industry to move us out of the Access Control Business."

First of all, the alarm industry was regulated in California way before Locksmiths were. The laws that govern each trade are there to protect the public and have nothing to do what so ever with one trade encroaching on the other. If the alarm industry is able to get laws passed that prevent locksmiths from doing work which we have done in the past, it is the locksmiths' fault.

If you as an individual do not support your industry by being a member of your state association, it is YOU who is killing our trade. YOU

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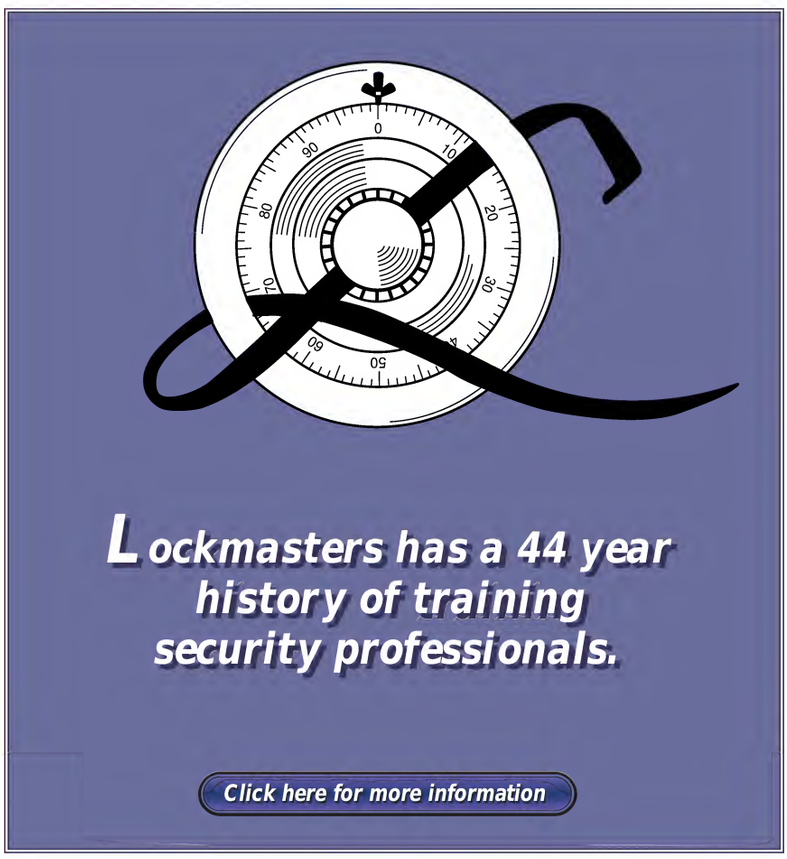

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who are constantly complaining about what others are doing to you but are unwilling to support your state associations are the problem. If you want "WE" to do something about your problems then "YOU" had better get up off your duff and join "WE" who belong to the associations and are trying to do something to save our trade.

I am sure that most locksmiths in California (non-association members) have no idea what laws our association has opposed in Sacramento that if passed would really have cramped your style. There is strength in numbers, the voice of one person is just blowing in the wind.

How big do you think the membership in state locksmith's associations are as compared to the number of people in the trade? 10%, 20% more? How about membership in the alarm industry association? How about membership in your states medical association.

In our state, the California Medical Association has a yearly budget of over $1,000,000 for their political action committee. How many legislators listen to an association that has that kind of money to hand out yearly? Chances are your state association through the lack of support of the majority of locksmiths in your state may not even be known by anyone in your state capital. Did you know that the United States Government does not even recognize Locksmithing as a trade?

Not long ago when the government was looking for bids to replace all the exterior locks on 5,000 housing units there was no category for locksmith, we were put in the carpenter category.

When are all you non-members going to join your state and national associations so that we can make our voices heard?

If you as an individual want "WE" to do something to help you, you better join up so that our association, your association is big enough to let the public and the legislature know that locksmithing is a trade and that "WE" exist.

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Sal reviews service procedures with the smallest of the ASSA padlocks.

The ASSA #2 Padlock

by Sal Dulcamaro, CML

In addition to high security cylinders, ASSA manufactures locking hardware which includes padlocks. The #2 padlock is the smallest of ASSA's high security padlocks and uses the Twin 6000 high security cylinder. We will work with the extended shackle key-retaining version, model no. 65191LB. *(See photograph 1.)*

1. The ASSA #2 padlock in the extended shackle key-retaining version, model no. 65191LB.

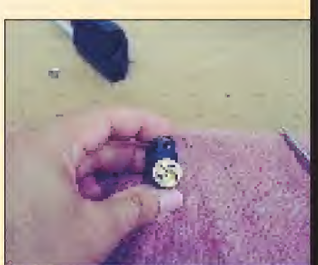
It's approximate size is 1-7/8" for the width of the padlock body, and 5/16" diameter for the shackle. These figures are not exact since it is a European lock that was designed with metric dimension specifications. The #2 padlock is also available in four other models: no. 65190B- Standard Shackle/ Non Key-Retaining; no. 65190LB- Extended Shackle/ Non Key-Retaining; no. 65191B- Standard Shackle/ Key-Retaining; and no. 65191SB- Shrouded Shackle/ Key-Retaining.

2. Bottom view of the #2 lock.

Photograph two shows a bottom view of the padlock. The outline of the oblong shaped removable and rekeyable lock cylinder can be easily seen in this picture. This particular padlock comes subassembled, meaning that the pin tumblers are not loaded and there is no sidebar. Note that ASSA high security cylinders use custom sidebars, unlike the standardized sidebars used by other high security sidebar locks. The side pins (which work in conjunction with the ASSA sidebar) by contrast, have been already loaded at the factory in a subassembled lock. The side pins in an ASSA Twin 6000 cylinder are identical to each other, since depth variation is determined by the custom sidebar itself.

3. With the shackle open, the cylinder retaining screw can be seen and accessed.

4. With the screw removed, the lock cylinder can be taken out from the lock body.



5. The back of the lock cylinder.

Lock Disassembly

Since the subassembled lock does not have a sidebar in place, it can be unlocked without a key. With the ASSA #2 padlock unlocked, the Phillips head cylinder retaining screw can be seen down the shackle.

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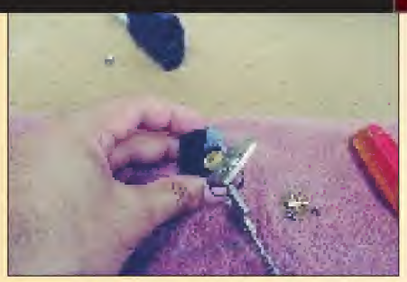


6. Leave the key in the cylinder once the screws and retaining plate have been removed.

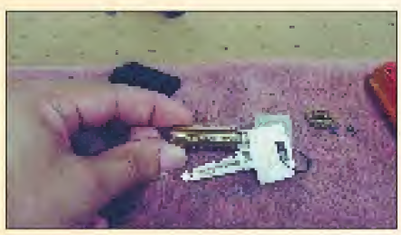
(See photograph 3.) After the retaining screw is removed, the lock cylinder can be pulled out of the padlock body. *(See photograph 4.)*

At the back of the lock cylinder, on top is the threaded hole in which the cylinder retaining screw goes. *(See photograph 5.)* The cylinder plug retaining plate and driver are held to the plug by two small Phillips head screws. Without an assembled sidebar, the plug will want to rotate while you are trying to loosen the two screws. Inserting a key into the plug keyway will allow you to exert counter force as you try to loosen the screws. You may want to use a spoiled (previously cut and unusable) key, in case you bend the key by overexerting during the loosening procedure. That way you won't damage the customer's key.

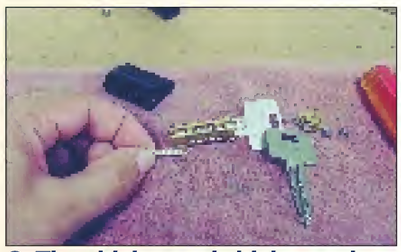
After the screws and retaining plate have been removed, it is important to leave the key in the plug before withdrawing the plug from the lock cylinder case. *(See photograph 6.)* The side pins which are contained within the plug are held in place by the lock case when the lock is fully assembled. When the plug is removed, however, only the key holds the side pins in place. If the key is removed, the spring loaded side pins will come out of the plug.

Installing the Sidebar

With the key in the plug to hold them in, the side pins are visible through the slot on the side of the plug (where the sidebar will be later placed). *(See photograph 7.)* Photograph eight shows a sidebar that



7. The side pins and slot where sidebar will be placed.



8. The sidebar and sidebar spring.

will be installed in the plug. A very small sidebar spring can be seen just below the sidebar. Sidebar springs have already been installed at each end of the slot on the side of the plug.

Just a quick reminder. As mentioned earlier, all side pins are identical to each other. Depth or height variation is controlled by the sidebar itself, not by the tumblers. The sidebar in the picture is just one of 3,125 *theoretical* reversible sidebars assigned to specific ASSA dealers. (Actual useable sidebar combinations will number less than the theoretical maximum.) Each dealer would install his/her own specific sidebar in locks for sale to customers.

With the sidebar in place, the plug is ready to be re-installed in the lock

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9. Sidebar in place. The plug is ready to be inserted into the cylinder.

cylinder case. *(See photograph 9.)* Since the sidebars are reversible, you can test whether it is positioned properly by pushing the sidebar inward to see if it seats fully into the slots in the five side pins. If the sidebar is backward, it can be reversed and put back in place.

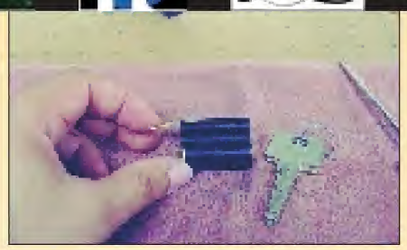
After the plug has been re-installed, the key can be removed since the lock case will now prevent the side pins from coming out of the plug. When re-attaching the plug retaining plate and tightening the screws, the sidebar will prevent the plug from rotating. *(See photograph 10.)* A key will not be needed to keep the plug from spinning.

Loading the Tumblers

With the proper sidebar installed, it is now time to load the pin tumblers. The pin tumbler component of ASSA Twin 6000 cylinders is quite similar to most any other brand of pin tumbler lock, so your basic pinning procedure will be quite familiar. There are some slight physical differences between ASSA pins and other brand tumblers, so you should not substitute under any circumstance.

The padlock cylinder uses a slide type spring cover, so the tumblers can be top loaded. Because the slide cover fits a bit loosely, it may be possible that it will shift by vibration under heavy use. Even if the cover did shift while the lock cylinder was installed

10. Reattaching the retaining plate.



11. Making a slight bend in the slide cover minimizes the chance it will vibrate loose.

inside the padlock body, there is no place for the tumbler springs to go. In that case, there would not likely be a lockout condition or other major malfunction. The only likely potential problem would be the possibility of springs and tumblers falling out during future servicing and rekeying as the lock cylinder was being removed the padlock case.

To minimize the possibility of a shifting slide cover, you can make a slight bend in the slide cover to make it fit more snugly in the track in which it slides. *(See photograph 11.)* The amount of bend you make will require a bit of experimentation. If you make too large of a bend, it will be nearly impossible to slide at all. Too slight of a bend will bring us back to the original problem where it might shift from vibration. A little bit of common sense should keep you out of

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Continued from page 17

12. Using a pen can facilitate sliding the cover over the springs.

trouble.

Loading the tumblers from the top in each pin chamber, you will load a bottom pin, (master pin, if any), and top pin or driver. ASSA drivers are all spool type pins, with the spool end of the pin down. Then tumbler springs are loaded into each chamber on top of the pin stacks. There are special rules regarding the size of the top pins used in each chamber depending on the total length of the pin stack, but I will not go into that in this article.

13. The key must remain in the cylinder until the shackle has been closed on this model.

The tumbler springs will normally stick out slightly. If you slide the spring cover in the track without pushing the springs inward, you will bend or cut the springs. You must push each tumbler spring slightly inward as you proceed to slide the spring cover over it. I have found that the tip of a pen works very effectively because it tapers to a point. The spring cover can be partly over the pin chamber (holding one side of the spring) while the tip is still inserted. Once the tip is fully withdrawn, the cover plate can be slid completely over that particular pin chamber. The next spring is then depressed with the pen tip, and the procedure is repeated until the cover is slid on all the way. *(See photograph 12.)* A very small Phillips head screw driver (or similar tapered tip tool) will also work to depress the springs as the spring cover is slid in place.

Reassembly

After all the tumblers and springs have been loaded and the spring cover is in place, the lock cylinder can be reassembled back into the padlock body. The lock cylinder will fit into the open cavity from which it was previously removed. Because this padlock is key retaining, the key cannot be turned back until the shackle is closed. Since the cylinder retaining screw is inserted through the shackle hole, the key must remain inserted into the cylinder and turned during reassembly. *(See photograph 13.)*

With the shackle turned out of the way the cylinder retaining screw is positioned inside the shackle hole. The screw is tightened down with a Phillips head screw driver to securely attach the cylinder inside the padlock body. The shackle can be snapped shut to remove the key, and the assembly is complete. *(See photograph 14.)*

A non key-retaining padlock will not require the key to remain turned in the lock cylinder during reassembly. Before closing the shackle, however in that case, it is a good idea to test your key in the lock cylinder to make sure it operates smoothly and properly. If for some unexpected reason you had not coded the lock cylinder properly and the key wouldn't turn, you would not be locked out. You could then remove the cylinder retaining screw and start all over again.

14. Secure the cylinder with the retaining screw, close the shackle and remove the key.

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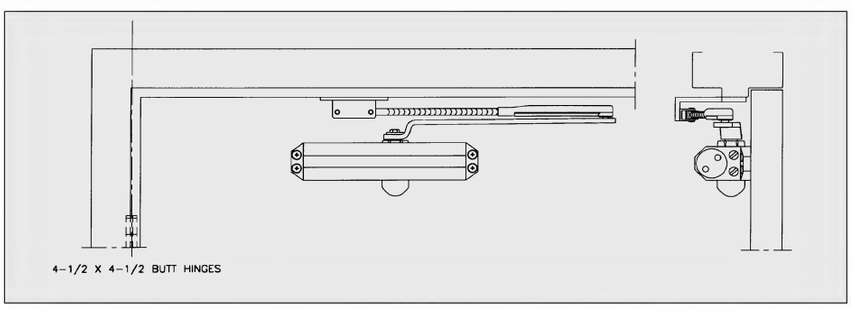
Test Article #109

Parallel Arm Mount Closers

by Jerry Whitcomb

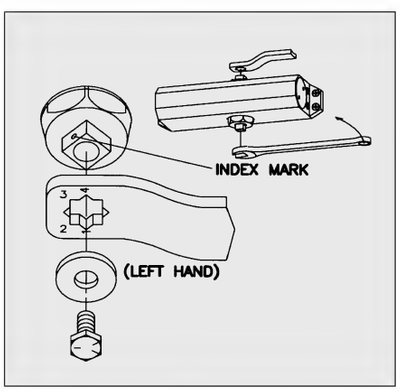
Parallel arm mount installations are substantially different from regular and top jamb mount installations discussed previously in this series. Parallel arm (P.A.) mount eliminates the "projecting" arm condition common to regular and top jamb applications, making these PA installations less susceptible to vandalism. The arm is parallel to the face of the door with parallel arm mount. *(See illustration 1.)*

Parallel arm mount typically requires upsizing the closer by one size. Again, this is necessary as a result of the different mechanics of parallel arm versus regular arm or top jamb. For example, if an exterior door 3'0" x 7' 0" would normally require a size 4 closer for regular or top jamb mount, a size 5 closer would be required for parallel arm mount. Follow the specific manufacturer's recommendations when sizing a closer for a specific installation.



1. In a Parallel Arm or P.A. installation, the arm of the closer is parallel with the face of the door.

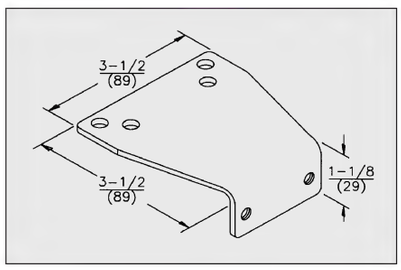
Due to less direct linkages of parallel arm mount, an additional step is required during installation. The arm must be "preloaded" 45 degrees. *(See illustration 2.)* Preloading ensures that the sweep, latch, and backcheck ranges occur at the correct degree of door opening or closing



2. When using the P.A. mount, the arm must be preloaded by 45 degrees.

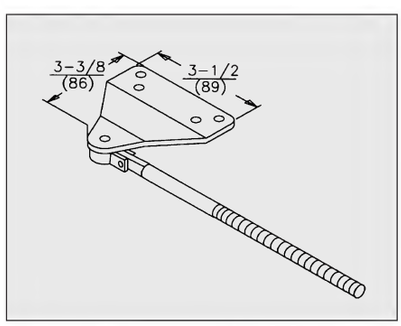
Some manufacturers build special parallel arm closers to compensate for these factors. Unfortunately, these closers can only be used for parallel arm mount applications. Therefore, most manufacturers build "universal" closers capable of installation in regular, top jamb or parallel arm applications. These closers are preferred from an inventory standpoint, but do require preloading and upsizing as noted.

Parallel arm mount incorporates use of a parallel arm bracket that attaches to the soffit of the frame. *(See illustration 3.)* The P.A. bracket must be used to provide a mounting surface for the foot of the closer arm. Installers sometimes try to mount the shoe to the stop or soffit without the aid of a P.A. bracket. This will always cause binding as well as premature wear and failure of the arm and closer. Parallel arm mount should never be attempted without a P.A. bracket.



3. The bracket needed for a P.A. mount.

Most manufacturers offer a P.A. drop bracket that can be used where surface-applied stops or holders conflict with mounting of the standard P.A. bracket and closer. *(See illustration 4.)* This P.A. drop bracket has an offset that lowers the closer on the door and typically eliminates the conflict. *(See illustration 5.)* Care must be taken to check the top rail dimension of the related door Moving the closer down as noted in this application could cause a different conflict. This is most common with glazed aluminum storefront doors or other doors with installed glass lights and a narrow top rail. Due to this condition, attachment of the closer can "conflict" with the glass.



4. In some cases specialty drop bracket may be needed to complete an installation.

Parallel arm applications may require use of a drop plate. This situation typically occurs when the top door rail is insufficient to mount the closer, as with glazed doors or with the use of the P.A. drop bracket as noted in the illustration *(See illustration 6.)*

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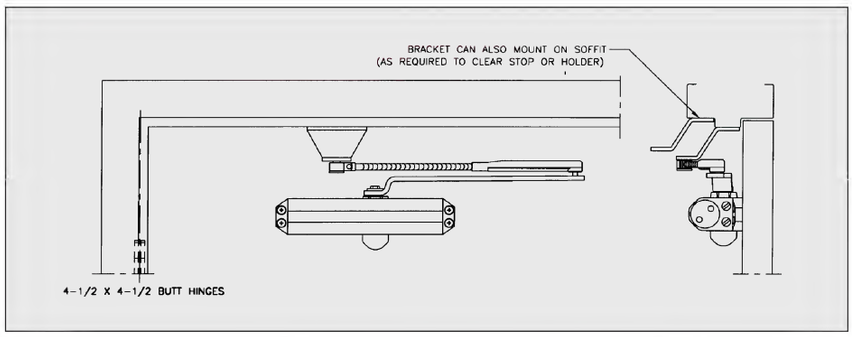
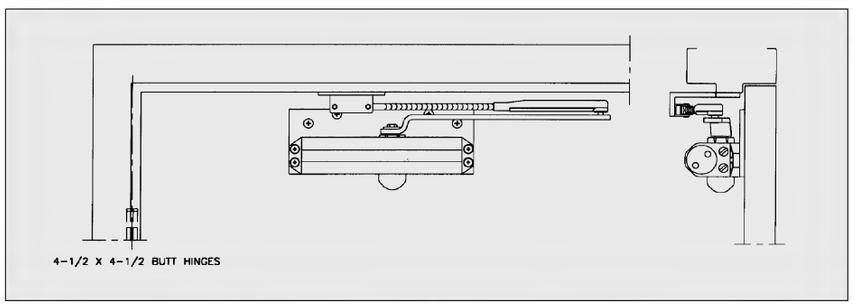


5. A drop bracket is used to provide adequate clearance when required.



6. In some cases a drop plate may be needed to properly mount a lower closer body.

Starting a parallel arm installation involves the same steps detailed in previous articles. These include checking the door to make sure it is plumb, square and level, and hung on pivots or ball-bearing hinges. There should be no binding, dragging or rubbing problems evident. Any problems must be resolved before attempting installation.

The door and frame must be sufficiently reinforced for attachment of the closer and related components. Some manufacturers offer heavy-duty parallel arm applications or heavy-duty P.A. arms which incorporate a limiting dead stop. Reinforcement is particularly important with these applications as the strengthened closer arm tends to transfer forces to the weak link in the chain. This can cause significant damage to a door or frame that is insufficiently reinforced.

Most manufacturers recommend through bolts or sex nuts for attachment of components on labeled fire doors. While the self-closing and self-latching requirement for labeled fire doors often conflicts with ADA barrier-free requirements, most authorities give precedence the life/safety factor over barrier-free access.

Retrofit of parallel arm mount closers is typically more involved than regular or top jamb mounts. While the closer body may be a direct replacement, the plates and arms may differ. Therefore, it is best to anticipate that a retrofit installation will involve remachining the door and frame as well as patching and painting the existing holes. As noted with regular and top jamb mount, the mounting position of the parallel arm mount components determines the maximum degree of opening. The correct degree of opening must be chosen to prevent damage to the closer. Previously, a specialty dead stop style arm was mentioned. These dead stop arms and/or separate limiting stops should be chosen when the door swing must be limited.

Installation

Read all manufacturer's instructions thoroughly, remove all parts from the packaging and check to be sure they are complete and undamaged. If all is in order, proceed as follows:

1. Determine the hand of the door. Machine the door and frame to accept the closer and parallel arm bracket. A machining template with appropriate dimensional details is usually part of

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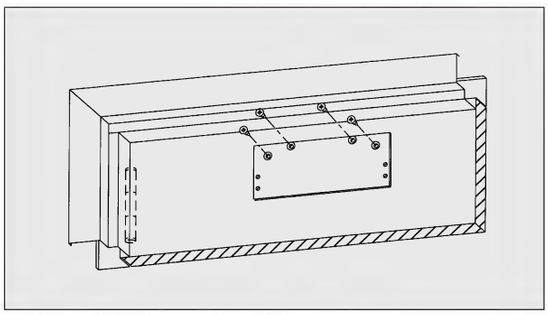
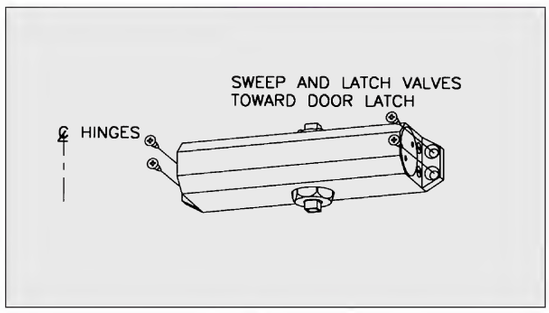


7. Install a drop plate if necessary.



8. Install the closer body to the door or drop bracket.

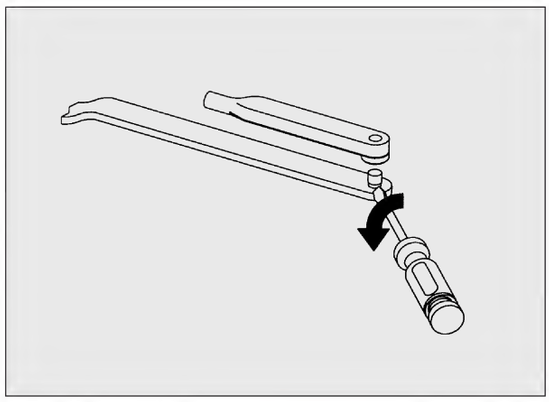
the instruction sheet. Don't be creative. Closers are sophisticated products engineered for years of service, providing they are installed consistent with the dimensions furnished by the manufacturer.

Aluminum or hollow metal doors and frames typically have to be tapped to accept machine screws. As discussed above, sex nuts are recommended for attachment of components on unreinforced, composite or labeled fire doors.

2. If using a drop plate, install it. *(See illustration 7.)* Mount the closer to the face of the door or the plate. *(See illustration 8.)* With parallel arm mount, sweep and latch valves should be facing away from the hinges or pivots.

3. Separate the main arm from the connecting arm at the elbow. *(See illustration 9.)*

4. Attach the main arm to the closer spindle, taking care to follow the indexing recommenda-



9. Separate the main arm from the connecting arm.

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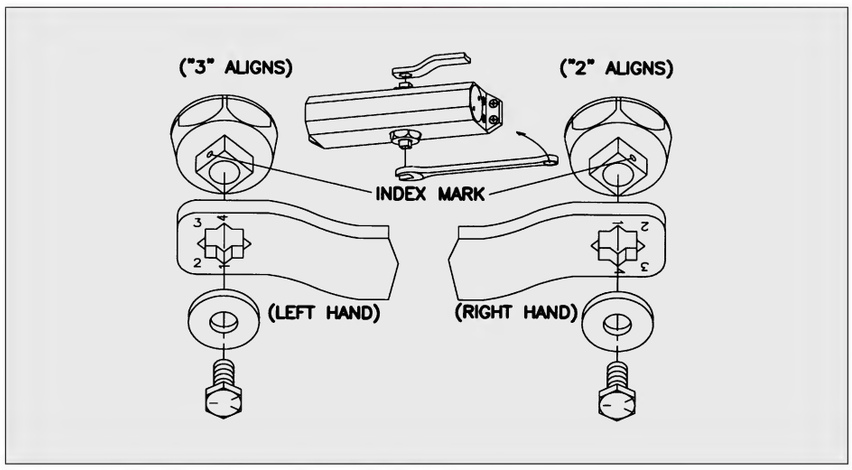
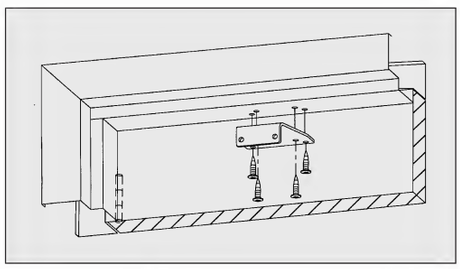
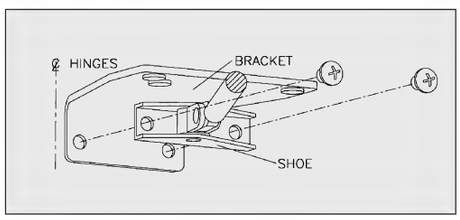


10. Attach main arm to closer spindle.



11. Attach parallel arm bracket to door frame.



12. Attach the connect the foot or shoe to the bracket.

tions provided by the manufacturer. *(See illustration 10.)* Parallel arm closers typically require preloading the pinion 45 degrees with the arm installed parallel with the face of the door. Secure the arm with a washer and pinion screw.

5. Install the parallel arm bracket to the frame. *(See illustration 11.)* Mount the arm shoe or foot to the P.A. bracket, then attach the connecting arm to the adjustment portion. *(See illustration 12.)* The arm length should be adjusted so that the main arm is parallel to the face of the door when the adjustment portion is attached to the main arm. *(See illustration 13.)* Perform the appropriate adjustments and attach the connecting arm to the main arm.

6. Open the door and observe the operation of the closer. Most manufacturers preadjust the closer at the factory, but it is still necessary to fine tune the adjustments to get optimal closer operation. Adjust the sweep speed (maximum opening to approximately 20 degrees) and the latch speed (20 degrees to closing), so that closing from 90 degrees will take approximately three to six seconds. *(See illustration 14.)* Faster or slower closing speeds may be desirable, depending upon the type and usage of the opening. A consistent, smooth closing cycle is most desirable.

7. Adjust backcheck and delayed action if furnished. Backcheck is the resistance provided by the closer to forceful opening. Delayed action is the delay or hesitation built into the closing cycle. Be sure that the backcheck is not set so strong that it is overly difficult to push open the door. When setting the delayed action, take into account the potential loss of heat or air conditioning that will occur if the door remains open for too long.

8. Adjust the spring tension if required. As discussed in the earlier article in this series, sizing is a function of the type of mount, the door width and whether the installation is on an interior or exterior door. Always reference the specific recommendation of the manufacturer when adjusting spring tension. After the spring adjustment is completed, again open the door to see if any modifications to the valve adjustments

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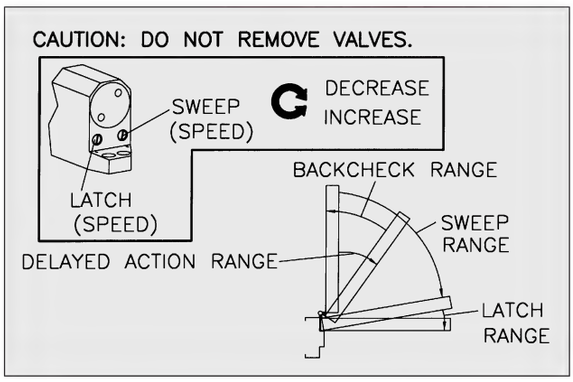
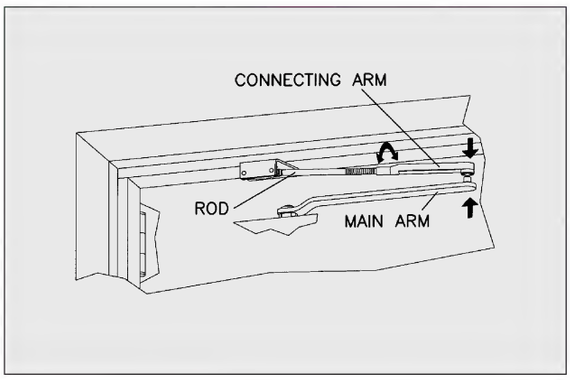


14. Adjust the sweep and latch speeds



13. Adjust the arm.

are required. (Some installers prefer to perform the spring adjustments prior to adjusting sweep, latch and backcheck. This is a matter of preference and will vary from installer to installer).

9. Pass through the opening, observing the door's function as it is used, and fine tune the adjustments. Observe all aspects of the door function to be sure the closer is performing reliably. It is better to spend a few extra minutes at this time than to later make a service call to readjust the closer.

10. Install the dust cap, and/or if the unit was furnished with a streamline or full cover, install them. Be sure they are securely attached, as a falling cover is a hazardous object.

Because parallel arm applications do not involve the projecting arm condition found in regular arm and top jamb mounts, they are often the application of choice in vandalism prone situations. An accurate, professional installation will ensure a closer that is both vandal resistant and trouble free.

The author is Technical Services Representative for DORMA Door Controls, Inc.

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Test Article #110

1995 Toyota Celica, Part 2

by Michael Hyde

Last issue we covered the ignition lock on a 1995 Toyota Celica. This month we complete the Celica service, starting with the door lock.

Door Lock

The door lock cylinder is integrated into the door pull handle assembly, that has become more and more common. *(See photograph 1.)*

1. The door lock is incorporated into the handle assembly and cannot be removed without first removing the handle.

To remove the door lock cylinder it is necessary to remove the door panel. The panel has several fasteners to remove. There are three plastic fasteners on the rear edge of the door, one screw on the inside door release/locking button assembly, one screw on the lower portion of the door pull, and four screws on the bottom of the panel. There is also two screws that have plastic trim covers on them that have to be removed. *(See photograph 2.)*

Once all the fasteners are removed, pull outward on the lower portion of the panel in order to remove it. The panel is held onto the door by the standard push-in style plastic clips. When removing the panel be sure to also unsnap any electrical connections. *(See photograph 3.)*

Next thing to do is remove the two 10mm bolts that hold the handle/lock assembly in place. This I have found is the best way to gain easy access to the lock cylinder. *(See photograph 4.)*

Now push outward on the lower portion of the handle to gain access to the lock cylinder, whether your removing the cylinder to service it or read the code stamped on it. The cylinder is held to the handle with a wire clip. *(See photograph 5.)*

The door lock cylinder has a facecap that must be removed carefully in order to re-use it. The caps are not produced by ASP. It is also necessary to remove the "C" clip on the rear of the lock, to remove the tailpiece. *(See photograph 6.)*

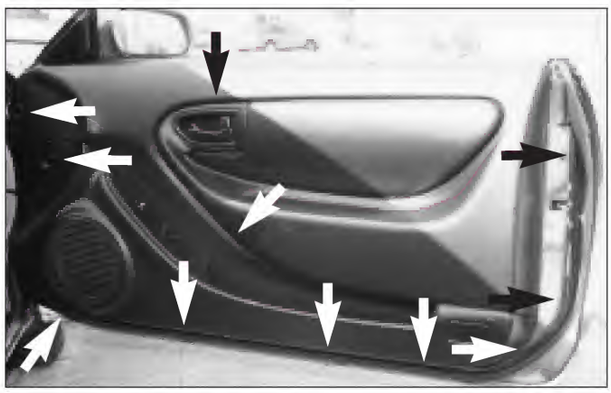
The lock cylinder consists of the cylinder plug, tumblers, cylinder housing, tailpiece, plug spring, facecap, and "C" clip. *(See photograph 7.)*

The door cylinder plug has all eight tumbler positions. Positions four and seven are split tumblers. *(See photograph 8.)*

Trunk Lock

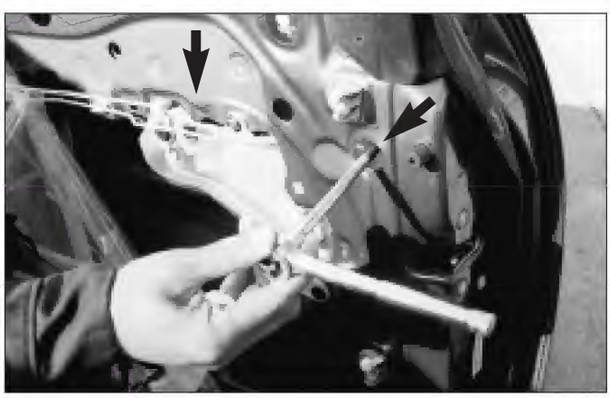
The trunk lock cylinder is located in the body, near the passenger side taillight. *(See photograph 9.)*

Most models now have a manual trunk



2. Remove all the screws and clip from around the door panel.

3. Remove the door panel being careful to unsnap electrical connections.



4. Remove the two 10mm bolts that hold the handle in place.

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5. Gently pull the handle out to read the code or remove the lock. The lock is held to the handle via wire clip.

6. Gently remove the facecap, it must be re-used. Then remove the C clip on the back.

lever release located on the left side of the driver's seat, on the floor. *(See photograph 10.)*

To service the trunk lock it will be necessary to remove the rear plastic trim piece. It is attached with eight fasteners that must be removed. Once you have removed the trim piece you have plenty of access to the lock. *(See photograph 11.)*

The lock is bolted to the car body with two 10mm bolts. Since this lock has the a feature to lock-out the manual trunk release lever there are two cable attached to it. One cable connects the lock with the latch assembly and the other cable is the manual release lever cable. When the lock cylinder is in the horizontal position the manual trunk lever release will not operate. When the lock cylinder is in the vertical position the release lever cable will pull on the tailpiece of the lock cylinder and in turn will pull the latch cable to the release position allowing the trunk to open. *(See photograph 12.)*

A view of the rear section of this lock's tailpiece is seen in this photograph 13. The "C" clip has to be removed to slide the tailpiece off the lock.

It will be necessary to remove the facecap in order to disassemble the cylinder plug from the housing. Gently pry up on the detent tabs to remove the cap, the cap will have to be re-used *(See photograph 14.)*

The disassembled trunk lock cylinder is pictured. The cylinder plug contains tumblers in nine positions. The first eight are the normal spaces and the ninth position is for the Valet function of the lock. Positions four and seven use split tumblers. *(See photograph 15.)*

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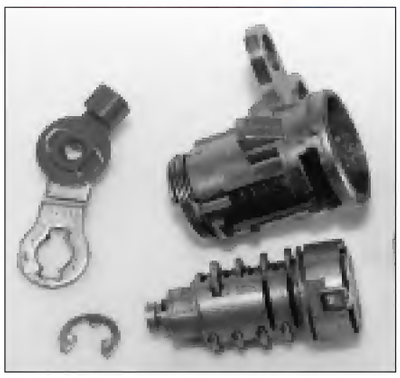

7. The disassembled door lock.

8. The door cylinder has all eight tumblers positions.

Glove Box Lock

The glove box lock is held into place by way of two screws. *(See photograph 16.)*

Once the lock is removed from the car it is easily serviced. Push in on the retaining wafer to slide the cylinder plug out the front of the housing. The plug contains tumbler positions 5, 6, 7 and 8. There is a split tumbler in position seven. There is an additional tumbler position for the Valet function of the key. *(See photograph 17.)*

Method #1) Check owners manual for code, written in by the dealer or fellow locksmith.

Method #2) Remove passenger door cylinder and read code stamped on lock.

Method #3).Disassemble door cylinder or trunk cylinder and decode wafers to make master key. (TIME: 10-20 minutes)

9. Location of the trunk lock.

10. Most models have a manual trunk lever release at the left side of the driver's seat. This can be used to access the trunk if a key is not available.

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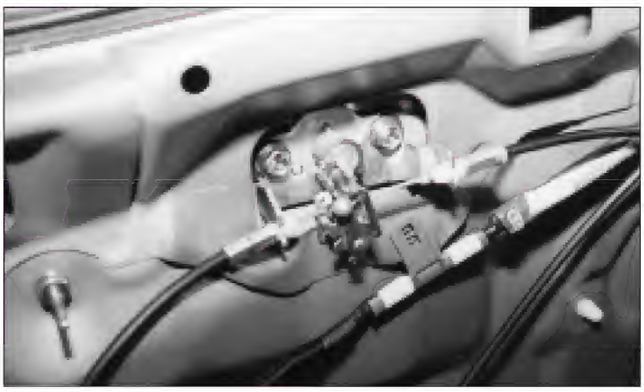
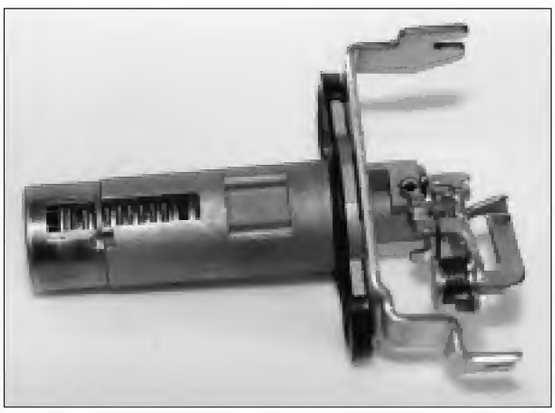
11. Eight fasteners hold this plastic trim piece in place.



12. After disconnecting the cables, the lock can be removed by taking out the two 10mm bolts that hold it in.

—— SPECIFICATIONS ——

CODE SERIES:.....10000-15000
KEY BLANK:.....Ilco X217/TR47 / Silca TOY43
REED CODES:.....11-02-064
HPC 1200CM #:.....CF208, PUNCH PF208
M.A.C.S:.....2
FIRST CUT:.....885 (measured from tip)
CUT to CUT:.....090
DEPTHS:.....1=.323, 2=.299, 3=.276, 4=.252
FRAMON:.....Use Ford 5 PIN Spacing Clip, Set Starting Cut @ .017 (First Cut From Bow)



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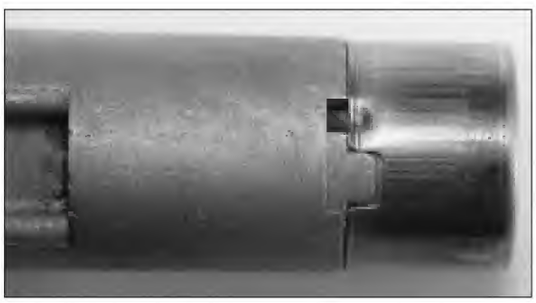
13. Remove the C clip and pull off the tailpiece.

15. The disassembled trunk lock.



14. Like the door facecap, the trunk's facecap must be re-used.

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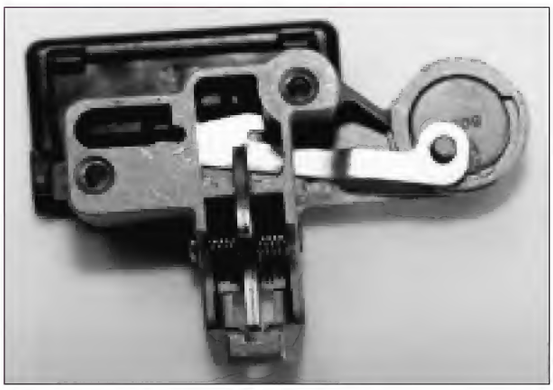
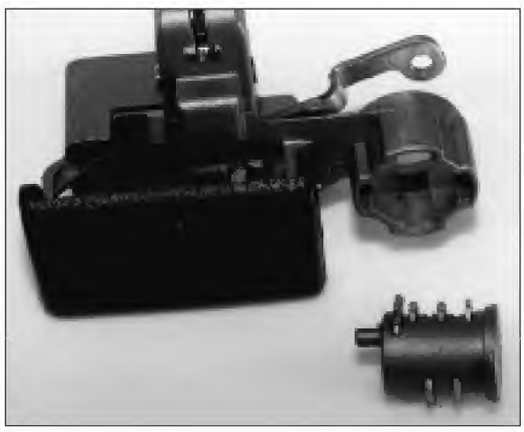
16. The glove box lock is held in place by two screws.



17. Depress the retainer on the back of the plug and push it out the front.



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Test Article #111

Testing Your Wireless System

by Joe Moses, Ph. D.

Once an alarm system has been installed, it is necessary to test the various components to make sure they are functioning. Testing the system should always be performed after installing a new system, servicing a system, and/or after adding or removing devices.

The checklist below is an overview of the steps to a successful installation. It is recommended that new installers attend an NBFAA certified workshop for the most thorough training available.

- Testing the sensors
- Testing phone communication
- Testing communication with the central station

Testing The Sensors

The sensor test lets you determine whether signals are being received by the control panel. It also tells you how many data rounds transmitted by each sensor were received by the panel. The goal of testing is to determine the quality of the sensor location in relation to the panel. Because the sensor test only tests sensor operation for the current installation conditions, it is important for the installer to test again if there are any changes in environment or equipment.

To perform a sensor test:

1. Place all sensors in their secured state, normally open or normally closed.
2. Replace the battery door on the panel if the door is off.
3. Cover PIR lenses.
4. Enter the primary access code plus the sensor test code.
5. Trip each sensor. *(See table 1.)*
6. Count the number of transmission beeps.

The system will confirm which sensor has been tested and whether or not it has passed.

7. Press STATUS when you think all the sensors have been tested.
8. The system will let you know if you missed any sensors. If you have, test all untested sensors now.
9. Exit sensor test.

If a sensor fails the test:

SENSOR	ACTION
Door/Window	Open the secured door or window. After counting the beeps, close the door or window.
Smoke	Press and hold the test button until he system sounds transmission beeps.
PIR motion	Avoid the PIR's view for 5 minutes. Enter its view, or use the PIR"s walk test feature.

Trip each sensor to test for proper sensor operation and communication with the panel. The table describes how to trip sensors for the sensor test.

Table 1

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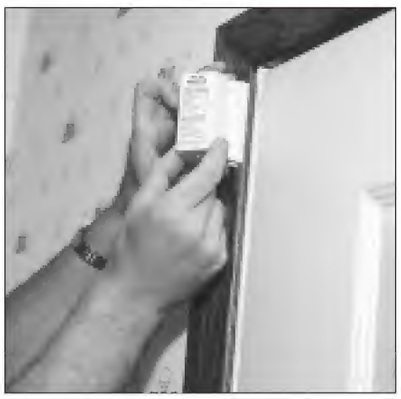
1. Use an RF sniffer to verify that the sensor is transmitting. *(See photograph 2.)*



Photograph 2

Locate sensors within 100' of the panel whenever possible. Panel range varies with the installation environment. Mounting sensors within 100' of the panel reduces the impact of environmental conditions that may exist on the premises. Sometimes merely changing the sensor location can help overcome adverse premises conditions.

2. If necessary, improve sensor communication by:

- repositioning the sensor
- relocating the sensor
- replacing the sensor

To reposition the sensor, rotate the sensor and test for improved communication at 90° and 180° from the original position.*(See illustration 3.)*

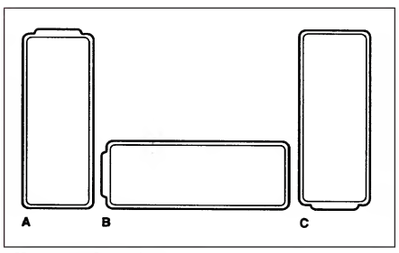


Illustration 3

If poor communication persists, relocate the sensor.

To relocate the sensor, test the sensor a few inches from the original position. Increase the distance from the original position and retest until an acceptable location is found. Mount the sensor in the new location.

To replace the sensor, test a working sensor at the same location. If the transmission beeps remain below the minimum level, avoid mounting a sensor at that location. If the replacement sensor works, contact the manufacturer for repair or replacement of the problem sensor.

Testing Phone Communication

Perform a phone test to check the phone communication between the panel and the central station. A phone test takes a maximum of 15 minutes to complete, although usually it is shorter.

To perform a phone test:

1. Enter access code and phone test code. The panel will indicate that the phone test is on.
2. Wait for a signal that the phone test is complete or that there has been a failure.

If there is a phone test failure:

1. Check to be sure the panel is plugged into the RJ-31X jack.
2. Enter access code and phone test code.
3. If the phone test still fails, check to be sure the phone number that you programmed is correct. If necessary, change the phone number and enter the phone test command again.
4. If the phone test fails again, check the phone connection wiring.

Testing Communication With The Central Station

After performing the sensor and

Continued on page 125

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Allstate Tailors Business Insurance for Locksmiths

A locksmith business insurance plan, addressing the needs of both the mobile and retail locksmith, is being introduced by Allstate Insurance Company.

The policy was designed after extensive research into the needs of the locksmith. Policies are handled by local Allstate agents, and claims are handled by the national network of claim service centers.

The program offers business auto coverage, Inland Marine coverage, comprehensive general liability coverage and business property coverage, all of which enable a locksmith to get the business up and running fast should a loss occur.

A brochure detailing the program is available from Allstate.

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Tag it! Centralized Retrieval System

Tag It! introduces its nationwide key ring retrieval system. While a number of registration programs offer this service to their customers or membership, Tag it! saw that a national computerized system, open to the public was needed. Participants receive an attractive key tag and ring with personal registration number. Now, anyone can register their key ring.

The company is looking for merchants across the US to extend this service to their customers.

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Powerful D Size Probe Light By Slide Lock

Step up to a full size, multiple use, portable probe light equipped with the large "D" cell battery pack. Supplies five times the power of smaller AA lights for extra power when you need it most, even though the cold winter months.

Equipped with a durable broad spectrum, pre-focused, high intensity, replaceable bulb. Long 18" wand accesses small 1/4" openings. This is a professional aviation probe light perfect for door cavity viewing. Includes a 7 pound capacity window suction cup for hands free operation.

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Locknetics CM5000 Electronic Lockset

Locknetics Security Engineering recently expanded its CM Series Electronic Locks. Each Computer-Managed lock in the CM Series provides for 150 user codes and an optional 100-event audit trail. They also offer a choice of TouchEntry Electronic Data Key operation. Programming may be accomplished through the keypad or TouchEntry reader, or with a DOS-based portable computer. The lock's micro-motor is powered by four AA batteries, which provide 80,000 actuations.

The CM5000 Electronic Cylindrical Lockset is now available with four functions. In addition to the office, classroom and storeroom models, a new dormitory/privacy function is available. A button on the inside cover allows the occupant to lock out all codes or data keys except an emergency code or data key.

A new CM5300 Mortise Lock Retrofit Kit is also available. This kit includes a keypad or TouchEntry reader, a controller with micro-motor and batteries on-board, and a modified existing Corbin/Russwin mortise lock to electronic operation.

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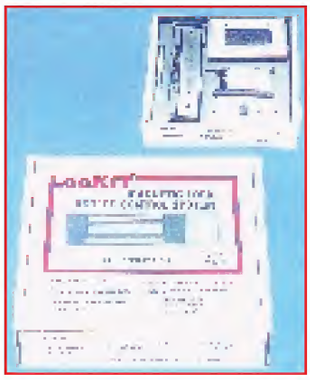
Advanced Signaling Co. LocKit



A complete access control system in one package, the LocKIT includes a 1,000 lb. magnetic lock, a power source designed for a specific magnetic lock, LED annunciator for every condition of the access system, and a release button that is supervised by a 3-wire connection. Control panel terminals allow for lock release by either/or remote voltages, closures, and openings. Also available in the control panel is an auxiliary voltage (12 VDC/100mA) and independent C form contacts for custom features of the installation.

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New PRESO-MATIC® Locks

PRESO-MATIC® Keyless Locks introduces two new finishes for the decorative and security door hardware industry, plus a new weldable gate box to be used in

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Continued from page 36

locked, completely covers the cylinder. The shield is raised and lowered by a combinated (encoded) magnetic key. Millions of combinations are possible. Magnetic keys can only be duplicated by the factory.

Securiguard® protects the cylinder from vandals' attacks with "Krazy Glue", toothpicks, or by picking, prying, drilling and wrenching. Inclement weather, which brings rain, ice and dust, will not harm the cylinder. Securiguard also functions as an effective access control device.

Securiguard's rugged extruded aluminum construction makes it extremely difficult to defeat. It installs over virtually any mortise or rim cylinder. It has been field tested in some of New York City's roughest neighborhoods and has passed the SB (South Bronx) test.

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Sentry Unveils Electronic Fire-Resistant Safe

To meet consumers' need for fire resistant storage along with theft protection for their belongings, Sentry Group has introduced a new one-hour fire-rated safe featuring a custom designed electronic lock.

Ideal for home or office, the Sentry® Fire-Safe® electronic lock safe, model 1610, combines UL-classified fire protection with the enhanced security of a reliable, easy-to-use electronic lock. The lock features an easy-touch pushbutton keypad with two access code options: a permanent factory pre-set code that is unique to each safe and survives battery failure, and a user-selected code that can be programmed in seconds and changed whenever desired. For convenience, and to avoid accidental lock-out, the safe features an exterior battery compartment for easy replacement of the required 9V battery.

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New Sprite Products By Dedicated Micros

Dedicated micros introduces the new Sprite product line of six digital video multiplexers housed in identical cases. Each Sprite has a footprint just over one square foot and 3-1/3" tall, and includes a built-in keyboard pitched at a comfortable angle. The design enables all Sprites to sit unobtrusively on a desk.

The new Sprite video multiplexers make desktop surveillance because they are compact and affordably priced.

The multiplexers are designed to open up the new emerging residential market and expand markets for small- and medium-sized businesses, and large organizations with CCTV requirements of up to 16 cameras.

Designed to meet a wide variety of buyer requirements, the new Sprites are available in capacities ranging from 4- to 16-cameras, color or monochrome operation, with simplex and duplex models.

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BEGINNER'S CORNER

On Line Key Generation

by Eugene Gentry

Marc Goldberg had asked locksmiths about the benefits of information that *The National Locksmith* provides by E Mail. I had benefited recently from posts relating to the impressioning of Master Padlocks.

There were a number of Master Padlocks and file cabinet locks without keys that had been laying around the shop. So one evening I got busy to try some of the impressioning methods I had learned on the computer.

One of the methods recommended filing the key's shoulder so it does not hit on the cylinder, which I have done in the past, but I also file a slot on the bottom of the blank where it hits the cylinder. This gives the blank more room to move so the impression marks show up better.

Another suggestion was to read the pins. I have read wafers before, but had never tried to read the pins. This is very helpful in impressioning. First you have to pick the padlock, then hold it in the picked position. Use a small tension wrench to give you room to see, and turn the lock upside down so bottom pins will fall by gravity to the shear line. The reading will tell you which pins are high or low, and with lots of experience you can tell what the depths of each should be.

By using a combination of all these ideas and more, I found that I could impression a Master Padlock in a reasonable amount of time. First, I would read the pins. Second I would use a Master depth key set and duplicate the various depths. For instance if I saw a low pin, high pin, high pin, low pin, I would guess this might be 4-2-2-4 depths. Using the depth keys, I would cut high, 3-1-1-3, then impression the rest of the depths if this was not correct. Time wise, this gives you a head start on the impressioning.

Another suggestion on the computer, was to make Master depth keys that are cut straight across the blank. The regular depth keys are spaced correctly, so you eliminate the spaces and have only the depths. You can cut these on your Foley Belsaw machine. Measure the blank. Mine measured .280". A 0 cut is .275", so you set you micrometer at .005". Each cut is .015" deeper. For number a 1 cut, set the micrometer at .020", a number 2 at .035", number 3 at .050" and etc. up to number 7.

I tried this out and it works good. With the Master padlock picked open, you insert the straight depth key. Starting with the shallowest depth key (a 0) try inserting the keys into the lock. The first key to pass the first tumbler is the depth of the first pin. If the pins were lined up 2-3-4-5, you can get all the depths. Marks on the side of the depth key give an indication of which pin you were on.

While I was trying some of these methods on the Master locks, I was also working on making keys for some file cabinet locks. A telephone call came from Tom Seager from Rodney, Michigan, who suggested that the GM tryout keys will open many of the cam locks. Using this method, in about 15 minutes, I found GM tryout keys that would work in two Chicago file cabinet locks, an old garage door handle, and two cam locks. The tryout keys worked tight in the Chicago locks, so I duplicated from the tryout key, and cut one .005" high and the other .005" low to make perfect keys for the locks.

Some of the locksmiths frown on the use of the tryout keys, but I find they are useful and time wise in generating keys for locks that can not be dismantled and locks that are difficult to impression. TNL

Check out these great books in this issue of *The National Locksmith!*

The 1995 Autosmart Manual
p. 18

The National Locksmith
Guide To: Safe Opening Vol. 1-5
p. 34

Door Lock Encyclopedia
p. 94

The National Locksmith
Guide To Modern Safe Locks
p. 121

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COVER STORY!

Mission: Possible

Single Cut Electric Strike Prep!

by **Steve Gebbia**

Using the right tools, preparing a steel frame for an electric strike can be fast and accurate.

Your task, should you choose to accept it, is to install an electric strike in a steel door frame in an efficient manner. Your greatest challenge will be cutting the opening the proper size without spending unnecessary time 'fine-tuning' the opening.

If you succeed, you will earn the praises of the customer who will gladly give you money and referrals. If you fail to cut a clean opening, you will gain the wrath of the almighty customer who will demand that you repair his now-damaged frame. As always, your reputation is yours to keep or destroy.

Choose your tools wisely. Using the proper tool will save you time, energy, and headaches. Use the wrong tool, and the job may just self-destruct on you!

Our crack staff of researchers have come up with the following suggestions: (See photograph 1.)

Dremel Tool

Becoming the standard for a large family of tools called mototools, the Dremel brand tool is an extremely versatile tool. For the locksmith, the main advantages are its light weight and small diameter cutting wheels, allowing clean, easy cutting of steel frames and doors.

There are two types of cutting wheels available for the Dremel. The first is a red, abrasive cutter. This wheel cuts very fast. But, it is also very thin and easily broken. You will probably go through several of these wheels for each opening you cut. Apply only light pressure when using this tool. If too much pressure is used or if the cutter binds in the opening, it will break.

The preferred cutter is the model #409 fiberglass reinforced cutting wheel. *(See photograph 2.)* Because it is sturdier, more pressure can be applied without fear of breakage. In fact, it cuts faster when medium pressure is used.

In general, do not force either of these cutting wheels through the cut. Allow the tool to do the work. Trying to force to tool to cut faster only overheats the tool and causes it to wear faster. It also becomes harder to control and it is possible injure you or another person.

Also, as you use these tools, you will notice that they will cut easier in one direction than the other. Always cut against the direction of rotation of the cutting wheel. When you do this, the cutter is exiting the cut as it does the cutting. Cutting with the direction of rotation may cause the cutter to walk across the surface of the steel, offering a much lower degree of control over the tool.

1. A die grinder, Dremel tool, and assorted tools for installing electric strikes. Using the right tool makes the job fast and easy.

Die Grinder

If a Dremel tool is a place-kicker, then a Die Grinder is a defensive back of a tool. It's big. It's cutter doesn't fit into tight places very easily. It even sounds big. The whine of the Dremel is irritatingly similar to a dentist's drill. The die grinder, however, has a low rumble that just screams power. *(See photograph 3.)*

Since the wheels are fiberglass reinforced, they are quite sturdy. It makes fast work of heavy-gauge steel mullions. Various diameter wheels are available, but the 3" and 4" wheels

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2. A #409 fiberglass reinforced cutting wheel and Dremel tool at work on steel frame.

3. A die grinder at work on steel mullion; Institutional Locksmith Chuck Gebbia at the controls.

are the most common. Of course, this means that the cutter may be wider than the desired opening. If so, you can still use this tool to make the majority of the cut and then finish it up with a Dremel tool.

This tool throws quite a few sparks, so wear eye protection. Long sleeves are also recommended to protect your arms from all those little, red-hot pieces of steel. Since you will be watching the cut closely as you make it, the dust from the cutter may be right in your face. A dust mask helps you breathe easier.

Even though it's much larger and bulkier to handle, this tool should be operated the same as the Dremel tool. Hold the tool firmly, but do not force it into the cut. It's more than powerful enough to do the job by itself. All it needs is a guiding hand. Also, make your cut against the direction of rotation of the cutter. If you try to cut with the direction of rotation, the wheel will grab and try to walk across the steel. This is a powerful tool with a lot of torque. If you lose control of it, it can cause serious injury. Use it wisely.

Plasma Cutter

The plasma cutter is widely used in the steel fabrication industry. They come in a wide variety of sizes. The smallest are portable units the size of an electric arc-welder.

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4. A portable plasma cutter includes the arc welder, an air compressor and a cutting head.

The largest are room-sized Goliaths that are anchored to the floor. These have huge, movable tables that the steel to be worked is maneuvered on. These monsters are used for high volume production of steel parts.

Photograph four shows a portable plasma cutter. It is made up of three basic components: a variation of an electric arc welder, an air compressor, and the cutting head. A grounding wire is also required. On a steel frame, if there is no available projection to attach the ground wire to, a steel screw can be driven into the frame to serve as a ground point. Later, this can be driven flush.

The electrode on the plasma cutter is circular. The arc is created on the inside of this circle. The compressed air is directed through the center of this arc, causing the arc to bend outward toward the work surface. It directs the arc to the point of cut. The airflow also forces the hot steel out of the cut before it has a chance to solidify. *(See photograph 5.)* This allows a very precise, delicate cut to be made. With practice, a cut with perfectly smooth sides can be made.

Other gases may be used to cut harder or denser steels. In each case, the electricity is not what makes the cut. The gas itself is ignited as it passes through the electric arc. The force of the compressed air then sends it into and through the material.

As you can see, this is a high-tech, specialized tool. It is not for everyone. A portable plasma cutter capable of cutting steel up to 1/2" thick costs between $1,400 and $2,500. If you only cut steel frames on an occasional basis,

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5. The plasma cutter at work. This device makes fast, easy and extremely clean cutting of steel frames and doors.

this tool is probably not for you.

This tool does one thing and does it very well - it cuts steel, a lot of steel, very quickly and easily. If you regularly cut steel doors or frames, this tool might just be a good investment. This is the fastest, easiest way to cut steel. If you have several frames to cut, you will do it in a fraction of the time it can be done with other tools.

6. Properly done, a good electric strike frame prep looks nearly factory complete.

Choose the best tool for the job. Use it wisely. Use it safely. Do this and you will complete installations you can be proud of. And, you'll save yourself time and headaches! *(See photograph 6.)*

• • • •

Plasma Cutter demonstration courtesy of Mike McNamara of All State Metal Fabricators, WoodDale, IL. (708) 860-1500

Other information on plasma cutter courtesy of Terrace Supply, Addison, IL (yes, they sell them too) (708) 530-1000.

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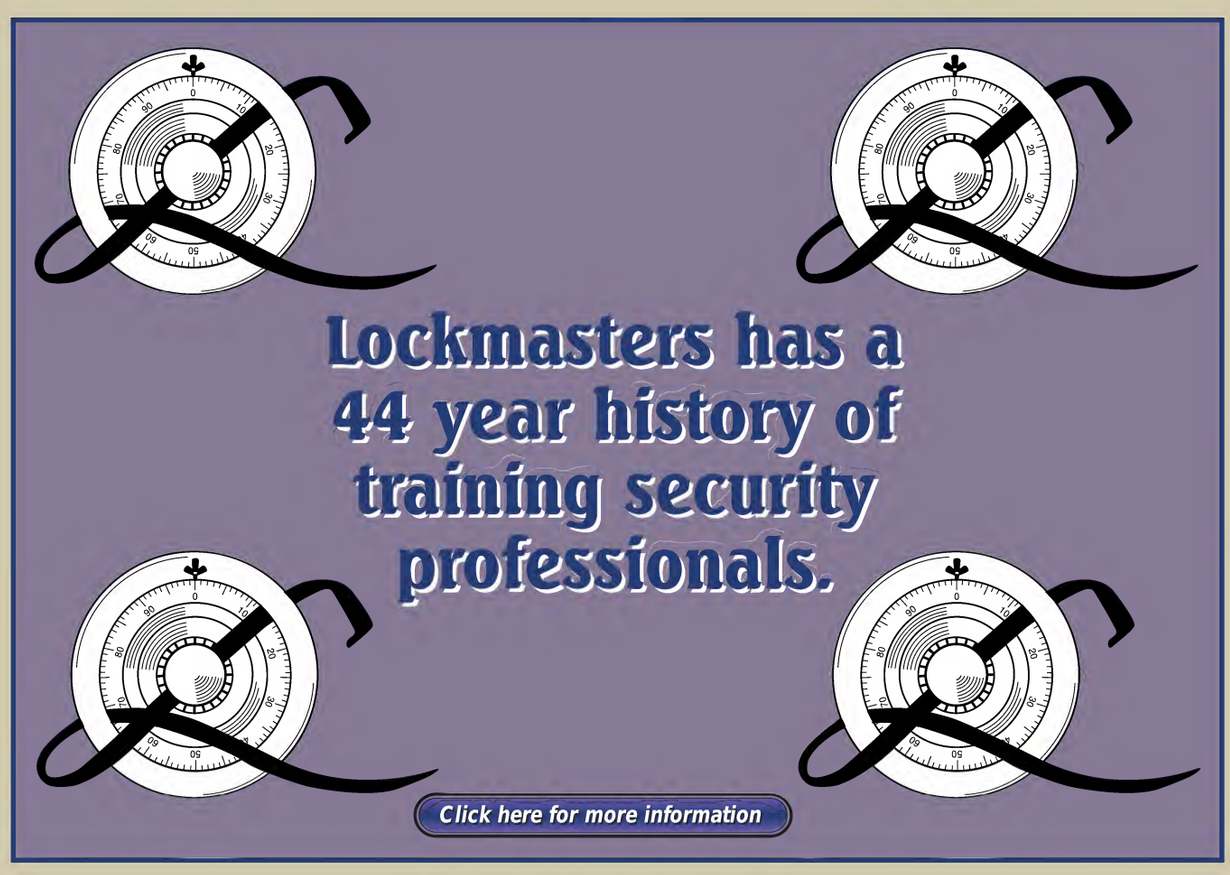

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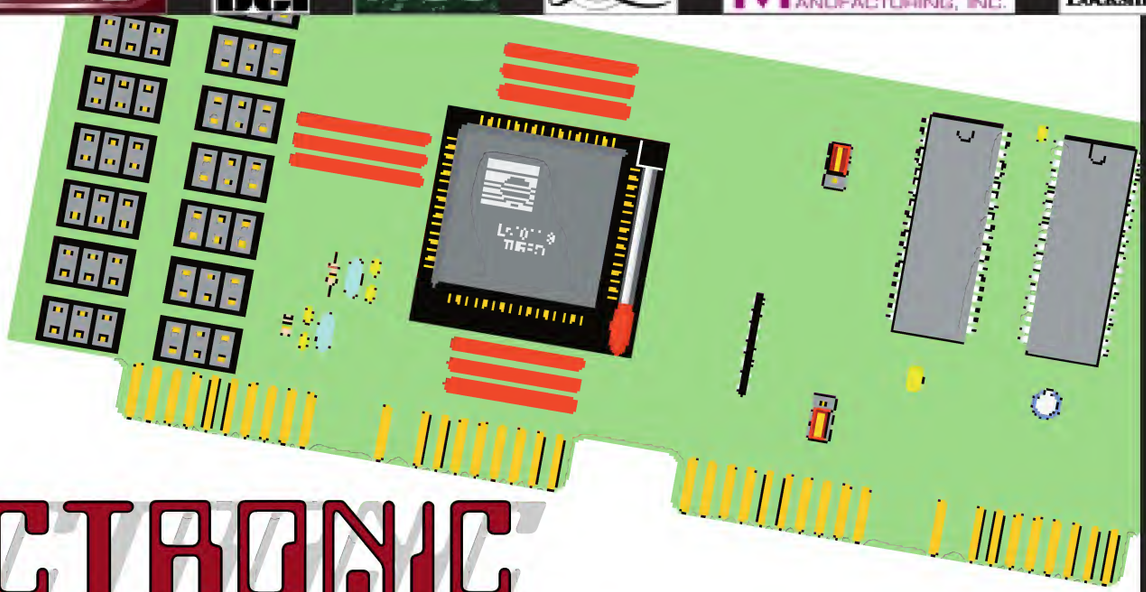


Electronic Locksmithing Made Easy

by Leland J. Hanchett, Jr.

Electronics and the Locksmith

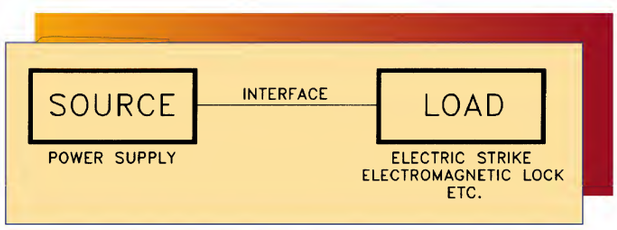
Electronics in its simplest terms is nothing more than interfacing a load and a source.

How many times during the past twenty years have you, as a locksmith, been told that you must learn the fundamentals of electronics? The doomsayers have preached that more and more access control problems will be solved electronically. Even locks might eventually be replaced by electromechanical wonders. Some believed this theory and have taken courses in electronics sponsored by their associations or various manufacturers.

Others, mostly the older and wiser, have sat back, waiting to see what would happen. Still, every year brings a host of new electronic products to the marketplace. Electric strikes, electromagnetic locks, solenoid operated bolts and electrified locks combined with keypads, card readers and even retina readers are making significant inroads into a market that used to be just locks and keys.

Where can you draw the line between locksmithing and electronic technology if one is to be drawn. Surely, we cannot expect a locksmith to design a retina reader. On the other hand, if the locksmith is going to remain the "go to man" when it comes to access control then he must at least be able to interface the various pieces of equipment on the market today. Sometimes that interface is mechanical such as mating a lockset to an electric strike. Often it is electrical, for instance providing the correct power source for an electromagnetic lock.

Generally, mechanical problems are simple for the locksmith, just measurements and a little cutting of wood or metal. The electrical match-ups are different, but with a few simple rules no harder than the mechanical ones. If you think of them as *interfacing* problems, not complex electronic problems, then maybe we have at least overcome our fear of the unknown.



1. The fundamental rule of interfacing - does the source meet the need of the load?

The fundamental rule in interfacing two electrical components is to make sure that the source can provide what is needed by the load. A simple example would be an electric strike, the *load*, which requires 24 volts and draws 0.25 amps and, therefore, must be driven by a *source* that can supply 0.25 amps at 24 volts. Of course, you must also know if the load requires *alternating* or *direct* current. *(See illustration 1.)*

When viewed on an oscilloscope, alternating current is voltage that swings plus and minus (seen as up and down on

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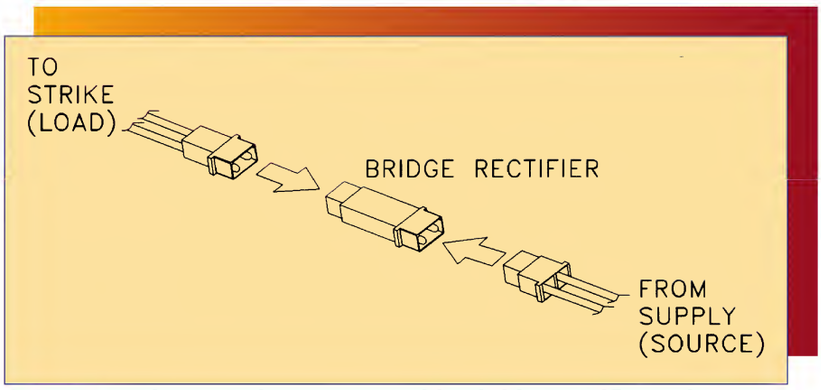
the scope) similar to the waves on the ocean. The source for this type of voltage is your wall outlet which usually provides 117 volts of alternating current. To make this source useful for most loads used by the locksmith (i.e. an electric strike) it must be reduced to 12 or 24 volts by a transformer. The output of the transformer is still alternating current.



2. Incorporating mated connectors with a bridge rectifier makes a correct installation almost fool proof.

Direct current is like the ocean at high tide where all the water stays at a high level. Direct current, as might be required by an electric strike, is achieved by passing 12 or 24 volts alternating current through a bridge rectifier or by using a 12 or 24 volt battery as the source.

Another consideration in interfacing is the tolerance of the load to slightly higher or lower voltage from the source. Too high a voltage will cause overheating of the load while too low a voltage may render the load inoperable.

Of special concern are the so called "regulated" 12 or 24 volt supplies used in the security industry. Typically these run at 13.8 or 28 volts in order to ensure their ability to charge batteries. Usually these higher voltages will overheat and damage solenoids found in the load unit.

Even transformers used to reduce 117 volts alternating current to 12 or 24 volts alternating current should be suspect if their power rating (a product of volts times amps or VA) is significantly higher than that required by the load. They may be designed to give the stated voltage at a higher current than what the load will use and, therefore, will provide a higher voltage at a lower current.

For example, a 24 volt transformer which can supply 1.5 amps will probably raise its output voltage to 28 volts if only 0.25 amps are required by the load. 28 volts might damage the load especially if it is turned on for a long time. The solution is to obtain a transformer which supplies just slightly more current than what is needed by the load at 24 volts.

In most applications the installer must choose the appropriate load to go with a source or conversely the correct source to go with a load. Occasionally you get to pick both. Rarely do you get stuck with existing source and load. Sometimes they simply won't work together and one or the other must go!

Fortunately for the industry, and especially the locksmith, some manufacturers have decided to start making their equipment "user friendly." Good examples are the plug in bridge rectifier and Smart Pac made by H.E.S., Inc. and the modular power supply made by Locknetics, Inc.

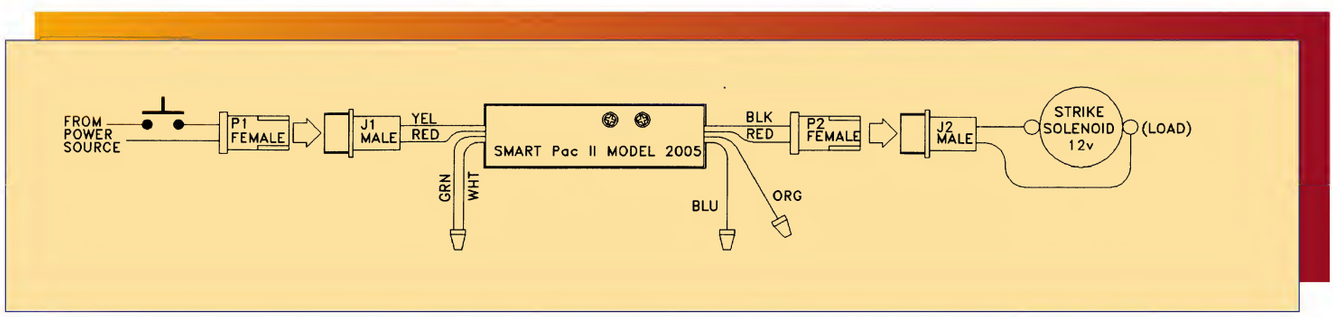
With the plug-in bridge rectifier, the installer simply inserts the unit between the electric strike load and the power source using connectors already attached to each unit. The installer need not worry about the rectifier orientation or polarity since these concerns are handled by the keyed connectors. *(See illustration 2.)*

With the Smart Pac, the installer of an H.E.S. electric strike need not worry about whether the source is 12 or 24 volts or whether it provides alternating or direct current. By using the Smart Pac between the source and the load a successful interface is guaranteed. You can even provide minimum on-times and device protection using this interfacing tool. *(See illustration 3.)*

Similarly, Locknetics offers a power supply source that is modular in nature. By simply adding the appropriate plug-in modules the locksmith can provide the correct source to match the Locknetics load that is being used.

Hopefully, more manufacturers will wake up to the notion that most locksmiths will not have time to be electronic engineers (that simply is not their job) and provide more installer friendly equipment. On the other hand locksmiths must learn the basic rules of interfacing electrical components just as well as they have learned how to interface mechanical devices.

The author is president of Hanchett Entry Systems. For more information on the Smart Pac and other H.E.S. products contact an H.E.S. distributor or call (602) 582-4626. TNL



3. Making electronics easy for the locksmith is the Smart Pac. A compact, easy to install power supply.

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COVER STORY!

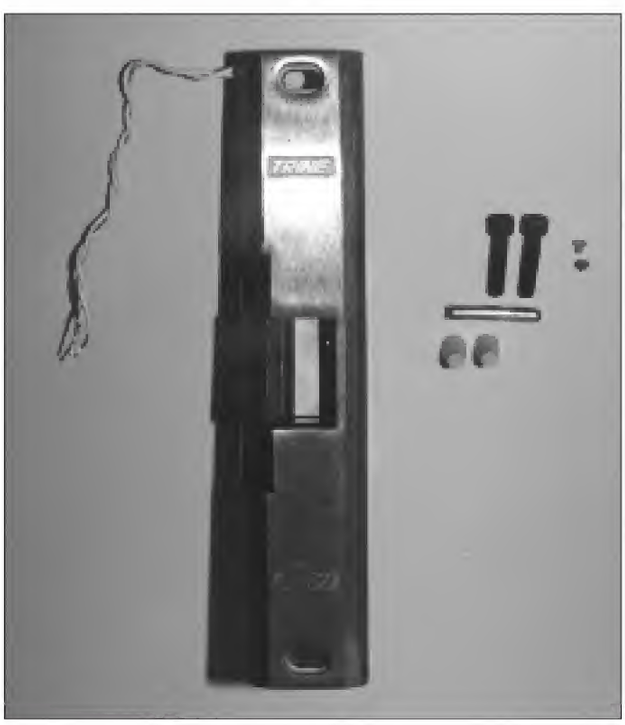
Trine's Answer To The Big Boys

While not new to strikes, Trine has confidently stepped into the high end, heavy duty strike arena with big boys Folger Adam and Von Duprin.

By: Tom Seroogy

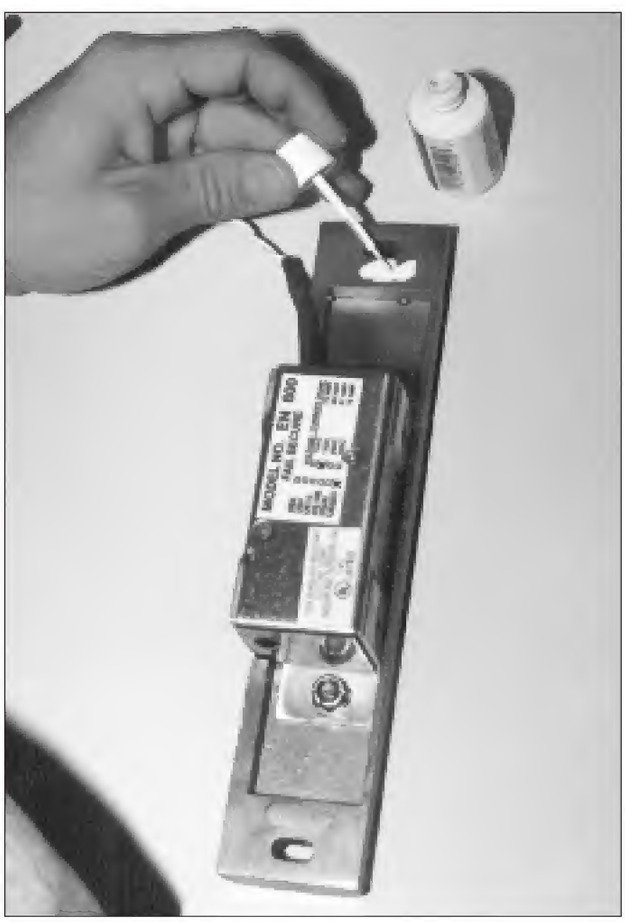
Finding an electric strike for rim device applications has been a relatively easy task years. The big boys, Folger Adam and Von Duprin, have supplied the brunt of this fast expanding market over the last 10 years. Well, there's a new kid on the block. Only this kid is no newcomer to providing electric strikes to the locksmith and access control industry - Trine.

For years Trine has produced mid-grade, reasonably priced electric hardware for most applications the locksmith might run into. Over the last two years, however, Trine has spread their wings and stretched their years of experience to start producing high end, heavy duty strikes - including strikes for rim exit devices.



1. Stepping up in line, Trine's EN 800 series rim panic electric strike comes in all the standard voltages, functions and finishes.

The Trine EN 800 series strike is a handed, field reversible, UL listed burglary resistant electric strike made specifically for rim device application. Taking its place with the big boys, the EN 800 is available in all standard voltages, functions and finishes. The package contains all necessary components for installing, including the hardware needed for changing handing. *(See photograph 1.)* Let's follow this procedure.



2. Mark the strike to index position of the strikes coil assembly - the wire end.

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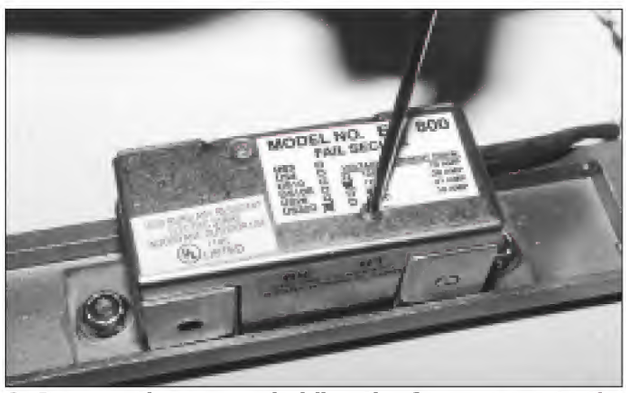
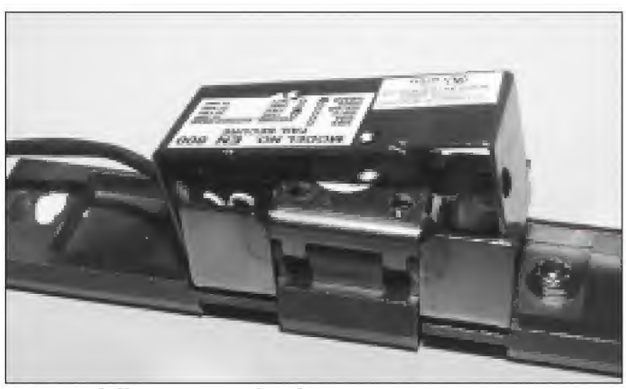


3. Remove the screws holding the frame cover to the strike.



4. Carefully remove the frame cover.

5. Remove the coil from the frame.

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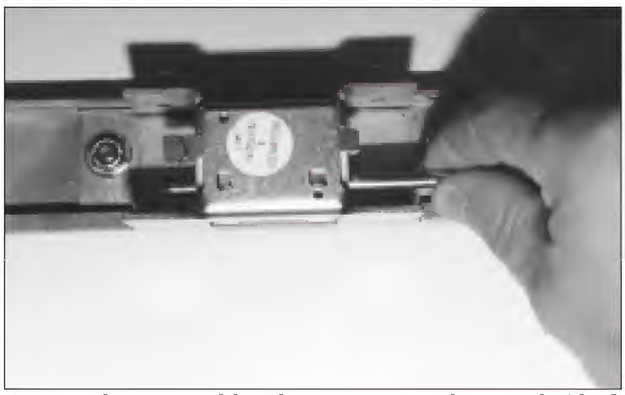


6. Use the Assembly Pin to remove the Latch Shaft Pin.

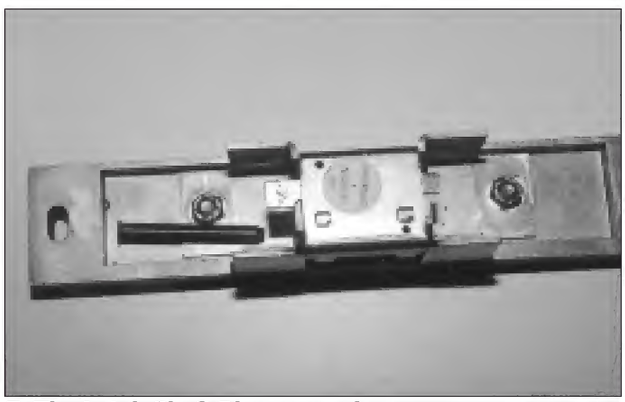
Before beginning disassembly, turn the strike face down and use White Out, a grease pencil or masking tape to make an index or reference mark on the side of the strike where the wire exits the coil assembly. *(See photograph 2.)*

Using a #1 Phillips head screw driver, remove the two screws that hold the frame cover in place. *(See photograph 3.)*

With the screws removed, gently maneuver the cover off of the strike. Be careful to prevent any possibility of damaging the coil wires. *(See photograph 4.)*

With the cover removed, the coil is fully exposed. Use a small straight blade screw driver to remove the coil assembly from the frame. *(See photograph 5.)*

In the parts package provided with the strike, you will find a metal pin about 1-1/4" in length. This is the Assembly Pin. Take the Assembly Pin and use it to push the Latch Pivot Shaft out from its place in the Latch. (See photograph 6.) The Latch Shaft Pin holds the Latch or jaw and the Latch Spring in place, and is the axis on which the Latch pivots. *(See photograph 7.)*



7. The Latch Shaft Pin removed.

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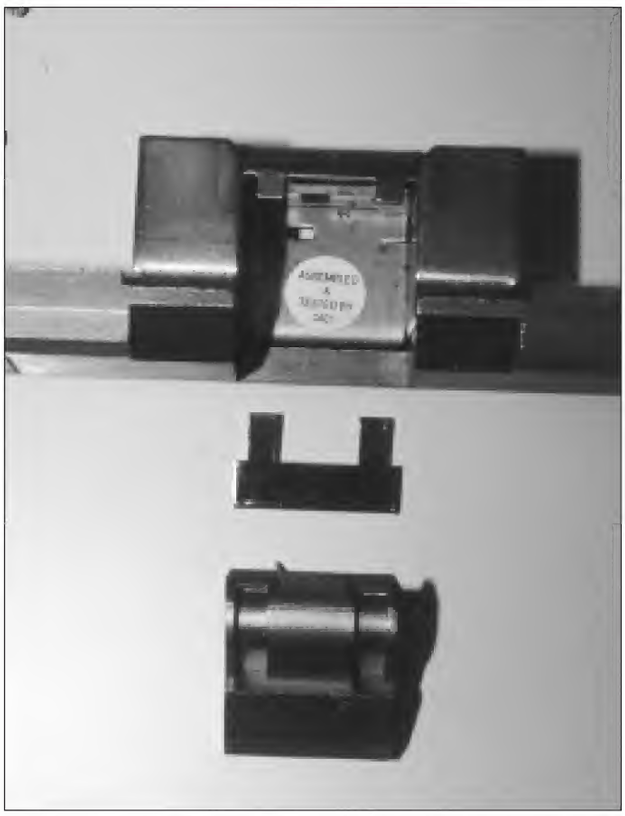
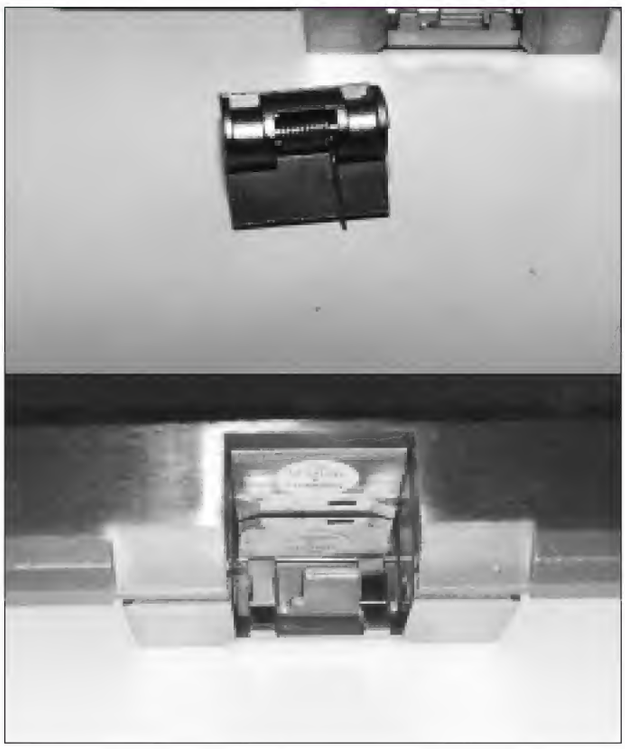
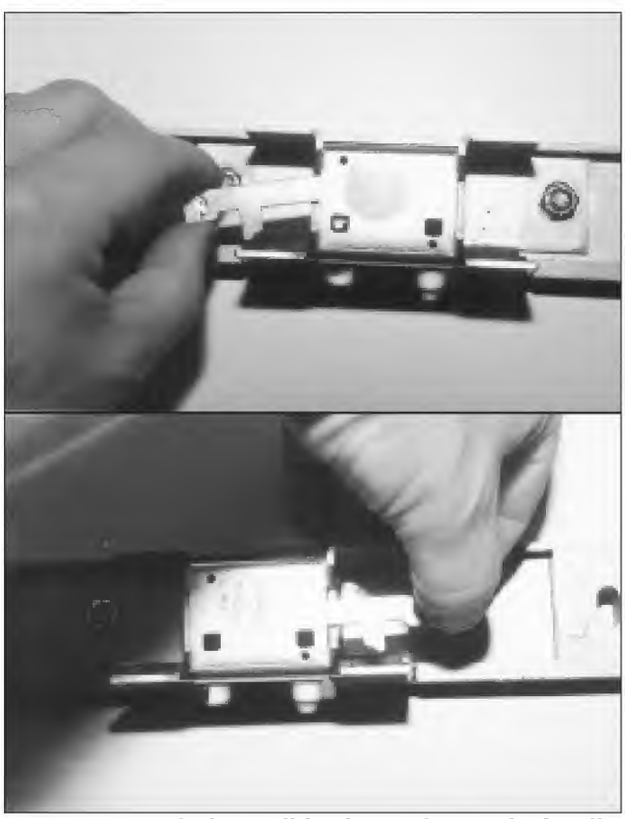


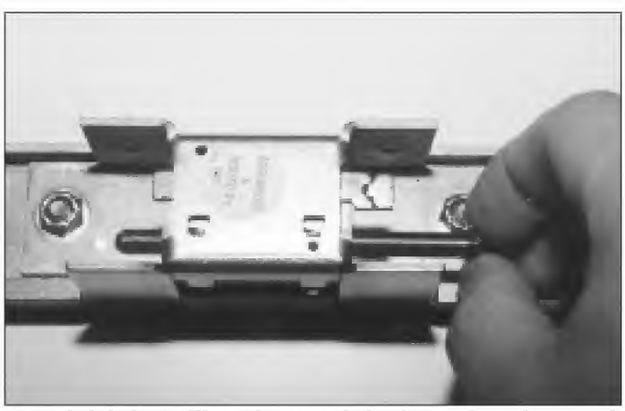
8. The Latch with Latch Spring and Guard removed from the strike.



10 Replace the Guard and Latch into the strike. Watch that the Latch Spring is properly mated with the small hole in the back of the strike



9. Remove and place Slider into other end of strike frame.



11. Finish installing the Latch by inserting the Latch Shaft Pin.

With the Assembly Pin positioned in the Latch, the Latch and Latch Spring can now be removed. Turn the strike face up and remove the Latch. Do not remove the Assembly Pin as this holds the Latch Spring in place. Found directly below the Latch is the Guard, remove this too. *(See photograph 8.)*

Turning the strike face down, now remove the Slider and insert it from the other side of the frame. You will notice a small welded tab on one end of the Slider. This end goes on the coil end of the strike frame. This end should now be on the strike end opposite the reference mark placed on the strike when we started. *(See photograph 9.)*

Continued on page 52

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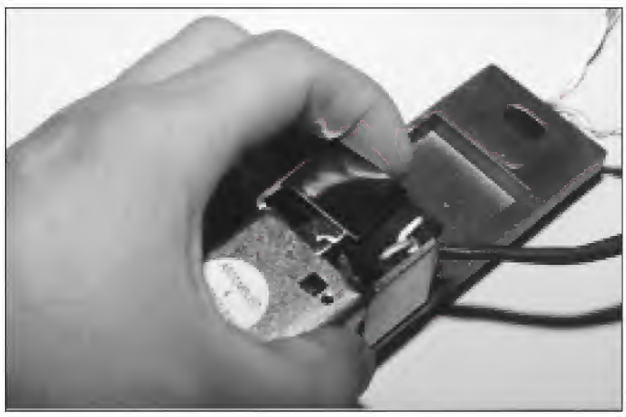


12. Install the coil.

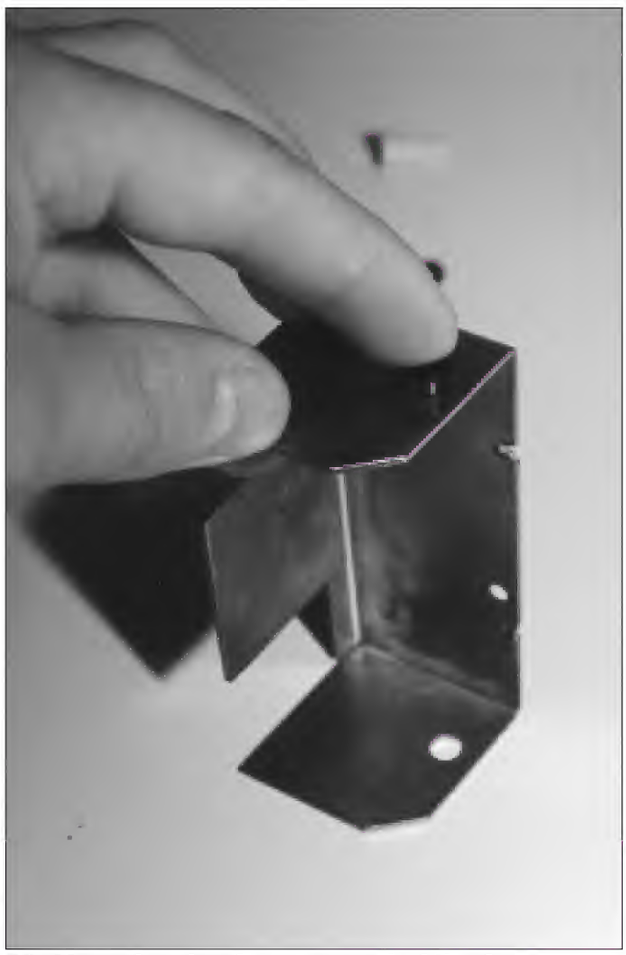
Turning the strike face up, replace the Guard and Latch in the strike. The end of the Latch Spring must be placed in a small square hole in the back of the strike. If not placed properly the Latch will not operate properly. *(See photograph 10.)*

Holding the Latch in place, turn the strike face down. From the strike end opposite our reference mark, use the Latch Shaft Pin to force the Assembly Pin out of the Latch and Latch Spring. You will notice that one end of the Latch Shaft Pin is mushroomed. This portion of the pin lies below and is held in place by the coil assembly. *(See photograph 11.)*

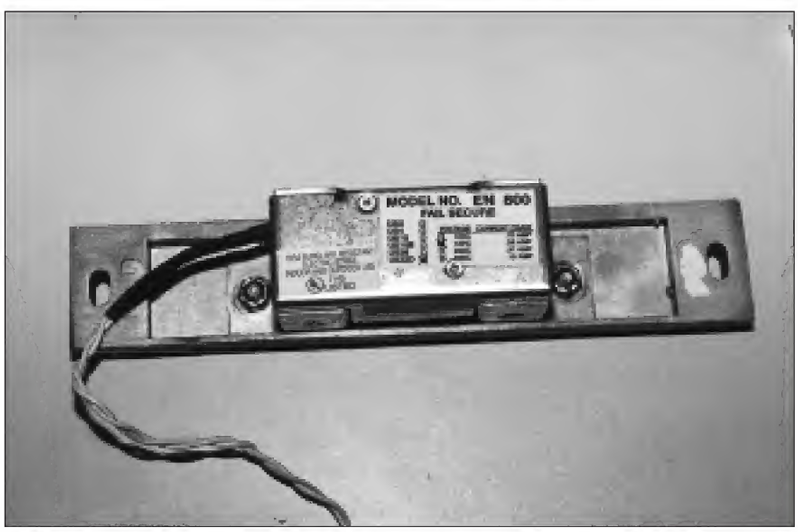
Carefully install the coil assembly. Remember, this piece in now on the end opposite our reference mark. When installing this piece, the welded tab on the Slider should be up inside the coil area. *(See photograph 12.)*

Take the frame cover. On one end of this unit there is a small plastic plug. Depress the two small tabs that hold this plug in place and remove. Place it in the identical hole on the opposite end of the cover. *(See photograph 13.)*

Replace the frame cover carefully feeding the coil wire through the frame cover. Take your time, do not damage the wires. Now you're ready for installation. *(See photograph 14.)* TNL



13. Move the plug from one end of the frame cover to the other.



14. Replace the frame cover and you're ready for action.

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(317) 635-8100
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(414) 252-4414
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(216) 642-3700
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(800) 526-5897
(913) 599-4111
Fax: (913) 599-4160

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(800) 392-1303
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Fax: (314) 426-6389

44. IDN-Hardware Sales, Inc.
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(800) 521-0955
(313) 591-1150
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Fax: (313) 545-0627

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(616) 534-7067
Fax: (616-534-1904

45. IDN-M. Taylor, Inc.
Philidelphia, PA
(800) 233-3355
(215) 288-5588
Fax: (215) 288-2511

46. Intermountain Lock & Supply Co.
Salt Lake City UT
(800) 453-5386
(801) 486-0079
Fax: (801) 485-7205

Denver, CO
(800) 323—8046
(303) 698-1898
Fax: (303) 698-2094

47. J. Nathan Hardware Specialties, Inc.
Rochester, NY
(800) 634-2580
(716) 325-3330
Fax: (716) 325-1796

48. Jack Stearman Ltd.
Vancouver, B.C., Canada
(800) 663-5397
(604) 872-8415
Fax: (604) 875-9174

49. JLM Wholesale, Inc.
Oxford, MI
(800) 522-2940
(810) 628-6440
Fax: (800) 782-1160

50. Jo-Van Distributors, Inc.
Scarborough, Ontario, Canada
(800) 268-5731
(416) 752-7210
Fax: (416) 752-3845

51. Security Lock Distributors
Needham Hts., MA
(800) 847-5625
Fax: (800) 878-6400

52. Kenco Locksmith Supply
Omaha, NE
(800) 228-2266
(402) 397-8291
Fax: (800) 228-4175

53. Key Sales & Supply Co., Inc.
Detroit, MI
(800) 445-5397
(313) 931-7720
Fax: (313) 931-7758

54. Keys Plus Distributors
Tonawanda, NY
(800) 644-5397
(716) 828-6655

55. Kramer Boys Supply Co., Inc.
Trenton, NJ
(800) 222-2692
(609) 586-0642
Fax: (609) 586-0512

56. LDM Enterprises
Westlake Village, CA
(800)451-5950
Fax: (818) 706-8560

57. Lockmasters, Inc.
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(800) 654-0637
(606) 885-6041
Fax: (606) 885-7093

58. Locks Co.
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(305) 949-0700
Fax: (305) 949-3619

59. Lockwise Products, Inc.
Miami, FL
(800) 447-6616
(305) 625-5525
Fax: (305) 623-9564

60. M. Shepse Co.
Pittsburgh, PA
(800) 666-6007
(412) 381-4900
Fax: (412) 381-5122

61. Mark Bates Associates
Nicholasville, KY
(800) 555-4471
(606) 858-0811
Fax: (606) 858-4292

62. Mayflower Sales Co., Inc.
Brooklyn, NY
(800) 221-2052
(718) 622-8785
Fax: (718) 789-8346

63. Maziuk & Co., Inc.
Syracuse, NY
(800) 777-5945
(315) 474-3959
Fax: (315) 472-3111

64. McDonald Dash Locksmith Supply Inc.
Memphis, TN
(800) 238-7541
(901) 797-8000
Fax: (901) 366-0005

65. McManus Locksmith Supply, Inc.
Charlotte, NC
(800) 432-6342
(704) 333-9112
Fax: (704) 332-8664

66. Mid-South Lock & Supply
Memphis, TN
(800) 238-6166
(901) 795-6987
Fax: (901) 795-3925

67. Midwest Wholesale Hardware
Kansas City, MO
(800) 821-8527
(816) 241-5663
Fax: (800) 621-6581

68. Monaco Lock Co., Inc.
Jersey City, NJ
(800) 526-6094
Fax: (800) 845-5685

69. Northeast Lock Corp.
Clifton, NJ
(800) 524-2525
(201) 777-7509
Fax: (800) 524-2576

70. Northwest Lock & Supply
Albany, OR
(800) 359-9425
(503) 967-2749
Fax: (503) 928-9338

71. Omaha Wholesale Hardware
Omaha, NE
(800) 238-4566
Fax: (800) 538-4566

72. Orchard Lock Dist. Inc.
Hamden, CT
(800) 233-2146
(203) 865-8106
Fax: (203) 624-4083

73. Pasek Corporation
South Boston, MA
(800) 628-2822
(617) 269-7110
Fax: (617) 269-0547

74. Patt Corp.
Lyons, IL
(800)621-4418
(708) 442-3901
Fax: (708) 442-3907

75. Pimlico Key, Inc.
Baltimore, MD
(800) 638-3815
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Fax: (410) 367-7315

76. R & H Wholesale Supply
San Francisco, CA
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Fax: (415) 863-7046

77. R.A. Graham Co.
Worcester, MA
(800) 333-3933
(508) 755-5815
Fax: (508) 755-6584

78. RA-Lock Company
Cedar Hill, TX
(800) 777-6310
(214) 291-1301
Fax: (214) 291-1346

79. Robert Skeels & Co.
Compton, CA
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Fax: (310) 639-7569

80. Rudy's
Cleveland, OH
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Fax: (216) 641-0060

81. Safemasters
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Des Plaines, IL
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(617) 423-4846

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82. Security Equipment Supply
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Fax: (314) 298-8962

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Fax: (913) 599-3716

Chicago, IL
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Fax: (708) 803-2143

Detroit, MI
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Fax: (810) 543-5576

Memphis, TN
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Fax: (901) 365-8356

83. Septon Inc.
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Fax: (914) 246-3416

84. Silver Sales, Inc.
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(214) 867-4545
Fax: (214) 618-1897

85. So-Cal Lock & Supply
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(800) 521-3551
(619) 474-8847
Fax: (619) 474-2440

86. Southern Lock & Supply Co.
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(800) 282-2837
(813) 541-5536
Fax: (800) 447-2299

Miami, FL
(305) 885-5779
Fax: (305) 885-8798

Oakland Park, FL
(305) 568-9669
Fax: (305) 568-3397

Charlotte, NC
(704) 527-6777
Fax: (704) 527-0058

Atlanta, GA
(404) 455-9233
Fax: (404) 455-3969

87. Stone & Berg Wholesale Locksmith Supply Co.
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(800) 225-7405
(508) 753-3551
Fax: (800) 535-5625

88. Top Notch Distributors
East Honesdale, PA
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Fax: (800) 854-4146

Carson City, NV
(800) 722-4210
Fax: (800) 248-3620

St. Louis, MO
(800) 211-4608
Fax: (800) 211-4608

89. Tram International Inc.
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(407) 677-0123
Fax: (407) 637-0203

90. Turn 10
Mareitta, OH
(800) 848-9790
Fax: (800) 391-4553

91. Tweed's Security Hardware Wholesalers
Portsmouth, VA
800-544-4482
804-399-2180
Fax: 804-399-1636

92. U.S. Lock Corporation
Brentwood, NY
(800) 925-5000
(516) 243-3000
Fax: (800) 338-5625

93. Westguard, Inc.
Twinsburg, OH
(216) 963-6116

94. Wilco Supply
Oakland, CA
(800) 745-5450
(510) 652-8522
Fax: (510) 653-5397

95. Zipf Lock Company
Columbus, OH
(800) 848-1577
(614) 228-3507
Fax: (800) 228-6320

96. Richmond Industrial Supplies
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(718) 448-2100
Fax: (718) 981-5665

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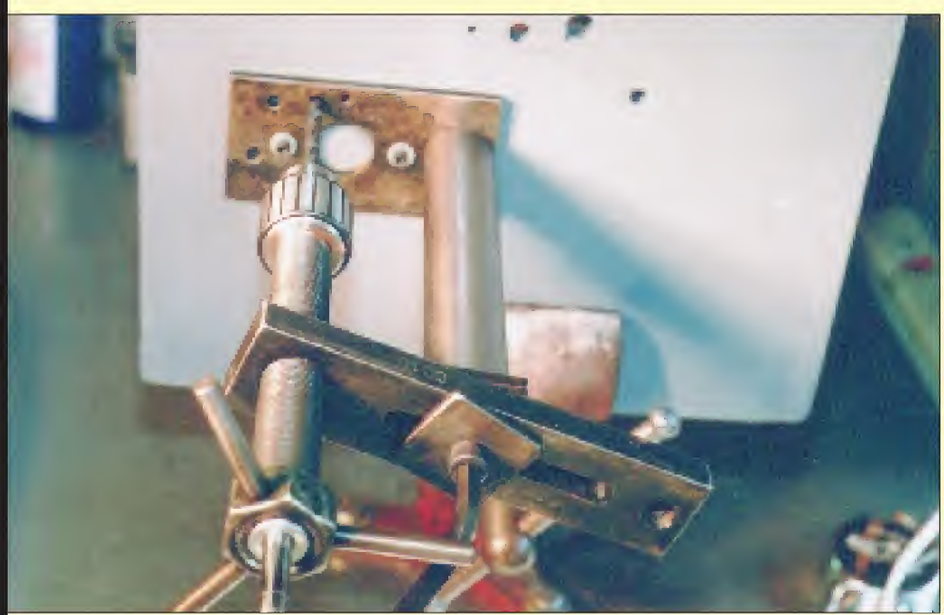
DRILL RIG

1. Keith Knott's drill rig, featuring case, templates, drill rig, transferring too, Major floor safe fixture, and screws/tools.

I received a call from Keith Knott whilst he was traveling around the United States. He had a drill rig he was making and selling, and he wanted my frank opinion on it. Actually what follows is my "DALE" opinion.

A drill rig is a drill rig. Certain ones possess options that may meet specific needs for specific safes. As with a choice of rigs, like the choice of a car and work vehicle, not everyone likes the same thing. For this discussion of drill rigs, I have divided the genre into two, types with two sub headings. These are my categories:

1. Fixed to Door
    a. Self Aligning
    b. Free Drilling
2. Free Form, Chained to Door.



2. The drill rig attached to practice safe. The long length of the rig allows a 6" drill to be used.

3. The S&G template and various drill points.

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WITH A DIFFERENCE

by Dale Libby, CMS

Dale runs a new drill rig through its paces.

The fixed to door rigs are usually attached via the combination dial indexing plate screw holes. The two most popular configurations are the Mosler 2" separated screw holes, and the S&G, LaGard, Diebold 1-5/8" configuration.

Within the fixed to door genre, there are those that are Self-Aligning or Free Drilling. The Strongarm Mini-Rig is the self aligning type. When the rig is properly attached, the hole you drill is pre-determined by the location you mount the drilling fixture. You cannot drill at a location that is not indexed by the template.

The free drilling attached fixture give you the option to drill at predetermined locations already marked, or at other places outside of

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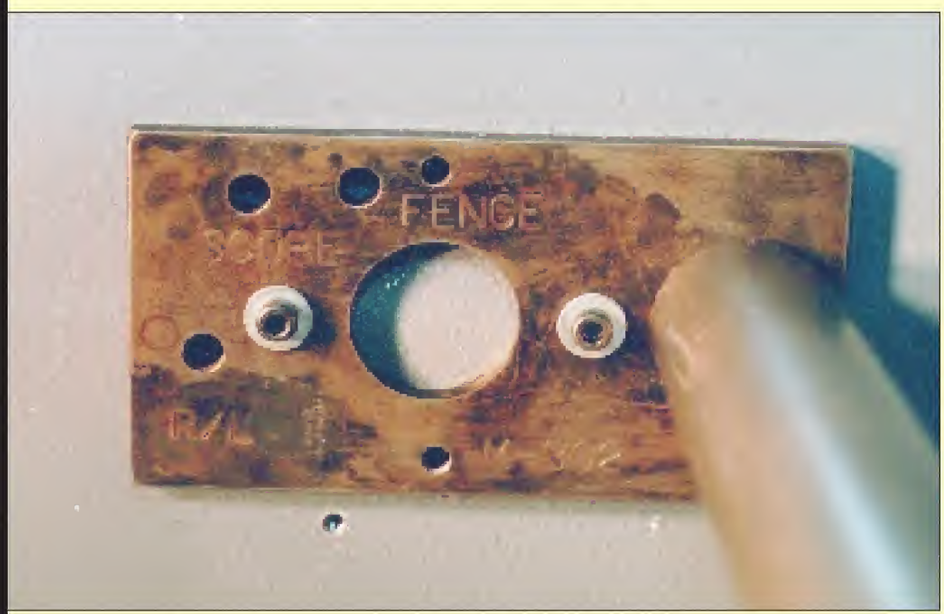


4. The Mosler template and drill points.

the foot print of the mounting template.

The free form, chained to door includes rigs like the Strongarm Lever Rig, or the famous LEE Drill rig. These ever popular units are chained or strapped to the door and pressure is gained by use of a lever bar to get through the hardplate.

All types of rigs have their positive influences and the level of competence of the user will determine what rig is to be utilized. Also, which rig or rigs owned will have a big influence also.

The drill rig for this discussion is a fixed to door, free drilling variety. The rig and its components is shown in photograph one. Included is a carrying case, a Mosler and S&G safe door templates, a Major round door template, the rig, post, and transferring tool. Also included are screws and tools. The tools include hex wrenches, mounting screws and washers, chuck key, and self tapping metal screws for mounting the unit to doors with sheet metal coverings.

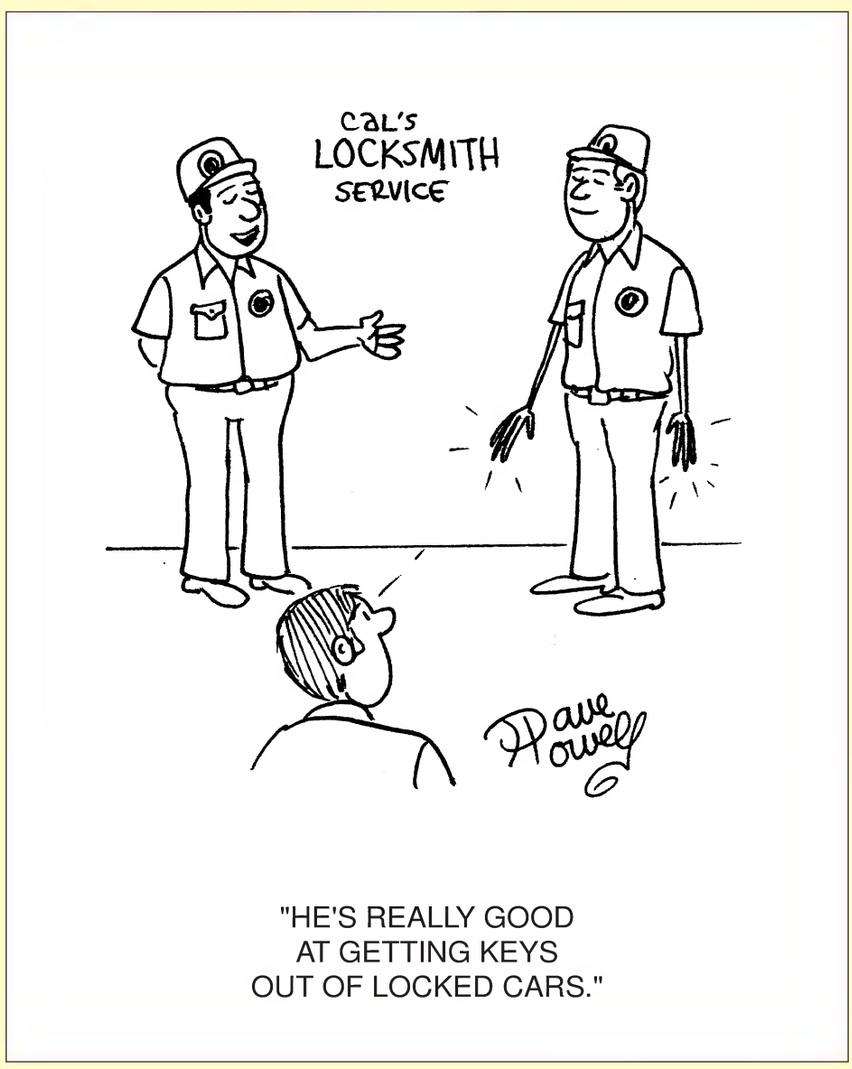
A brief description of the parts is warranted. The transferring tool is used when a hole is drilled in an incorrect location. It attaches to the dial spindle and uses non-numerical transferring techniques. The drill chuck is High Quality and Heavy duty. The long post is threaded at both ends. The mounting plates are stamped with what each hole is for.

When the unit is set up, it will look like photograph two. I drilled mounting holes and took these photos in the Libby Testing Labs. It is easier to photograph with the correct light, rather than on site, in less than favorable circumstances. I have used this unit successfully on three units, including a fire safe, a Diebold CashGard money safe, and a Major round door floor safe.

The drill is advanced using a three-bolt screw system. A nice feature about this rig is the length of the attaching post. One can use a 6" drill bit for the first hole. This is especially useful when long drill bits must be used.

The attaching plates can be mounted using the standard 12 o'clock and 6 o'clock mounting holes. Also the

Continued on page 63



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9 o'clock and 3 o'clock holes are provided. This unit used hardened cap screws with washers. This is a nice innovation which allows for a thinner mounting plate. Photograph three shows the Sargent and Greenleaf mounting plate. The holes included (marked) are:

1. Scope
2. Fence
3. Lever Screw Hole
4. Relock Trigger location.

These pre-located holes will work for most non-Mosler locks, including Diebold, LaGard, S&G, and Precision combination lock cases. Photograph three shows the scope hole being drilled using the S&G template. Note the washers on the mounting screws. The mounting plates are attached to the round rig post with three counter sunk screws at the back of the mounting plate.

Photograph four shows the Mosler mounting plate. There are three locations shown for the Mosler 302/402 combination locks. The 302 has Three Wheels and a Driver, the model 402 has four wheels and a driver. The frill locations are the same for both, the holes here are for:

1. Scope hole (over the lever)
2. Fence hole
3. Relock Trigger location

Because of the way Mosler Combination locks are made, drilling out the lever screw in a Mosler lock accomplished nothing, for the lever is 'trapped' within the combination bolt, and not above it, as in S&G. Drilling out the lever screw would accomplish nothing, hence, there is not a location for it.

One of the nice innovations for this drill rig is the addition of the Major Round Door attaching template. I used this method for the first time, and it really works well. Not only does this allow firm attachment to the door, but the repair is hidden.

To use the Major round door attachment is quite easy. Just remove the screws that hold on the handle on one side of the safe door. Then position and attach the Major attachment as shown in photograph five. The hole location between the two attaching screws is what we are going after.

5. Using the Major Round Door attachment.

6. Drilling using the Major Round Door template.

Photograph six shows the rig attached and drilling the hole. After penetrating the hardplate, change drill bits and also drill through circular bolt control plate. Now, a borescope must be used to view the wheel pack and a combination can be determined without removing the combination dial.

After opening the door, the hole can be repaired and filled, and the plate can be welded shut (if needed). If, for some reason, you drill the hole and the lock lever is in the way of viewing the wheels, another hole can be drilled under the opposite handle cap.

Once the safe has been opened and repaired and the handle and cover plate are reinstalled, the safe door will not look as if it had been worked on. All the repairs will be hidden.

Use a drill rig, OPEN & Prosper.

For further information, please contact: Keith Knott CPS, HC-07 BOX 109, Llano, TX 78643,(915) 247-3687. TNL

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BUSINESS BRIEFS

News from the Locksmithing Industry

INDUSTRY INTERVIEW...

Starting off 1996, we speak with Joe Moses, Senior Editor, Interactive Technologies, Inc. (ITI) manufacturer of wireless alarm systems.

How long have you been in the security industry, Joe?

I've been in the security industry for a year and a quarter. I got my first taste of the security industry in 1986 as a part-time writer for ITI while attending graduate school at the University of Minnesota. I worked on Sales Ahead, a newsletter for ITI dealers, but left the job in order to finish my dissertation. By May of 1994 I had graduated and was looking for a writing or a teaching job. That's when Tom Brayton at ITI called to ask if I would be interested in a permanent full-time writing position, and I accepted with pleasure.

What do you find to be the most enjoyable part of your job, and, on the other hand, what do you find the most challenging?

I enjoy interviewing security installers about their work. They're at no loss for words and they've done everything from casinos to sheds. Part of the reason that I love my work is that so many of the people I talk to in the industry love the work they're doing.

Joe Moses ITI Inc. Senior Editor

The most challenging aspect of working in the security industry has been trying to understand radio frequency energy. Fortunately you don't have to be an engineering genius unless you're designing the equipment. Installing and using it is a much simpler matter. But as a newcomer to the wireless security industry I've had to ask a lot of questions about radio and electronics. Interested readers should know that asking an engineer what a radio wave is like asking a literature professor what Moby Dick is about. You're not going to get a short answer.

In spite of being in this industry just a short time, Joe, what changes do you see taking place in this industry?

The changes taking place in the industry reflect the changes in the society at large. Transition seems to be the order of the day. Transition from all sorts of manual operations to automated operations. The classic example is the use of keychain transmitters to arm/disarm security systems.

As far as the direction the security industry is taking, there's no stopping the digital age. In some cases, programmable disks have already replaced keys as the fundamental device for access control. We're hearing the word wireless on radio and TV every day. We're not far from the day when wireless security devices will be as common as VCRs and telephones.

Changes in the industry have provided opportunities for expansion and perhaps more competitive challenges than some locksmiths would prefer to have to deal with.

With respect to the locksmith, Joe, what suggestions do you have for their success?

There are many ways to be successful in the security business; there are many ways to fail, too. If the labor cost of security installation is out of proportion, it simply takes too much time to make a decent living. The security industry took a leap forward when wireless became the vehicle for running a successful business. At that moment the costs of security shifted from the huge amounts of labor it takes to install a traditional hardwire system to the technology that goes into making a reliable wireless system. Security installers found that they can profit from quick, low-cost wireless installations even though the cost of wireless equipment is higher.

I see locksmiths becoming savvy security marketers. They're going to get better and better at evaluating security needs and at selling a full range of security products to their existing customers.

By remembering that you're not in the business of selling hardware. You're selling trust. I always think of the commercials for the health maintenance organizations that stressed choice of doctors as a big advantage. They knew that their prospective customers

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valued the ability to choose a doctor whom they trust because people want to feel comfortable with the person entrusted with their health.

It's the same for security. Locksmiths must demonstrate their expertise and their sincere concern for the security needs of the customer. Security professionals are expected to care as much or-by virtue of their knowledge of criminal behavior and security-even more about life safety than their customers do.

Any last comments?

This is an exciting time for people in the security industry because wireless technology has so many applications and is so easy to install.

TNL

HPC is proud to announce the ***10th*** winner in their monthly Codemax™ drawing. HPC has awarded a Codemax™ computerized key machine to ***Chris Clemence*** of ***Locksmith Auto Lockout in Germantown, Tennessee*** on ***December 1st.*** It was purchased through ***McDonald Locksmith Supply in Memphis, Tennessee*** HPC will be awarding a Codemax™ to a lucky locksmith every month through February 1996. To qualify, locksmiths simply need to purchase any 1200 Series Key Machine and send in their registration card along with a copy of their distributor invoice to HPC. Once this is done, they will automatically be entered in the contest. Entries will remain eligible until the conclusion of the contest. A total of over $47,000 will be awarded. There are still ***two*** more chances to win!.

A-1 Security Manufacturing has moved to a new 12,000 square-foot facility, more than doubling its old space.

"Because of the increased demand for our product, this larger facility will help expedite inventory and shipment needs of our customers well into the next century," explained **Frank McCarthy, president of A-1.**

The company's new address is 3001 W. Monroe St., Richmond, VA 23230, phone (804) 359-9003; fax (804) 359-9415.

Southern Lock & Supply Company is pleased to announce the addition of **Dan Ozycz** to our outside sales staff, **John "Jack" Christian** is taking over North Florida commercial sales as well as assuming training duties for new commercial sales people and responsibility for territory development, and **Dave Ellie** has been promoted to Inside Commercial Sales.

Security Lock Distributors has completed stocking the full Ives line in both their Needham, MA. and Pompano Beach, FL. service centers. Stock is maintained for the total Ives line, including all push plates, flush

bolts, hinges, latches, magnetic catches, window operators, door closers, sliding door hardware and Brassworks decorative hardware. Every product is stocked in all styles, sizes, and finishes. Phone (800) 847-5625. Fax (800) 878-6400. E Mail SECLOCK@NETCOM.COM

Adams Rite Manufacturing Co. recently announced that **President** and **CEO Peter Adams** will be stepping down from his current position. Mr. Adams will assume a more advisory role to the company that he and his family have helped build over the past 70 years. As the third generation Adams to guide the California-based company, Peter Adams has selected **Mr. Dick Kreidel** to succeed him as **President** and **Chief Operating Officer.**

Mr. Peter Adams

Mr. Dick Kreidel

American Lock & Supply, Inc., has announced two new distribution centers in New England and Long Island City.

Serving the New England and upstate New York markets, the New England Distribution Center is located at 224 West Cummings Park in Woburn, Massachusetts 01801. Phone (617) 938-7765 or (800) 291-2797, and fax (800) 291-2798.

The Long Island City Distribution Center is located at 50-10 27th Street, Long Island City, New York 11101. Phone (800) 628-5625, and fax (800) 328-2270.

Star Key Industries, Inc. announ-ced its relocation from Brooklyn to New Rochelle in Westchester County, New York. Its new address and phone number are: 10 Pine Court, New Rochelle, New York 10801; (914) 235-1700; fax (914) 235-1762.

Gerald Catanzariti has joined **Security Lock's** access control group. He is a specialist in the field of security hard-ware, with ex-tensive experience in troubleshooting as well as in the design and ins-tallation of complete systems.

Mike St.reeter has joined **KingAlarm** to head up its new location in Cincinnati, Ohio TNL

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The LIGHTER Side

Missing Person

by Sara Probasco

"You gotta help me," the woman's voice said tersely over the phone. "It's my sister. I was supposed to pick her up this morning and take her to San Antonio, shopping." Ellie Monroe paused.

Don waited a moment, then asked, "What is it you want me to do?"

"I need you to let me into her house."

"Have you lost the key, or what?"

"No, no. I've never had a key. June didn't want anybody having one, but her. Oh, I just knew something like this would happen. I tried to tell her, but she wouldn't listen."

"Well, Mrs. Monroe, that puts me in an awkward position. I don't see how I can let you into a house that doesn't belong to you, especially when you've just admitted the owner doesn't want you to have access to her house."

"How do you get to our store? Take a right on 32nd, then left on 64th, then right again on 43rd. You can't miss us!"

"But my sister...."

"You have to understand my position, here."

"But I must get into the house. I'm afraid something dreadful has happened to Sister. You see, she doesn't answer her phone or the door."

"Maybe she wants to be left alone. Have the two of you had a tiff or anything?"

"No. It's nothing like that. She was supposed to pick me up at eight, this morning, and here it is nearly nine. She's never late. I just know something is terribly wrong." The woman's voice had begun to tremble.

Don agreed to meet Mrs. Monroe at her sister's house in fifteen minutes. Then he called the police.

"I'm not sure what we'll find," he admitted to the dispatcher. "Miss Carper lives alone in her townhouse, and her sister hasn't heard from her since day before yesterday."

Don met the wailing, flashing police car a couple of blocks from the house, going the wrong direction. The patrolman recognized the locksmith service van and quickly U-turned, falling in behind Don as he wheeled into Miss Carper's driveway. Mrs. Monroe was already there, peering into first one window and then another.

The front door of the townhouse sported a Schlage entry lock and deadbolt. Don frowned. Not the easiest to breach, in a hurry. He walked around back, looking for easier pickings, and found a Weiser knob-lock put in upside down. Grumbling to himself about inept carpenters, he quickly had the lock open, despite the aggravation of having the curious policeman breathing over his shoulder every step of the way.

By now, three patrol cars, an EMS ambulance and a clutch of curious neighbors had all converged on the scene. The eager patrolman stepped

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back as Don turned the unlocked knob and gently pushed the door open. It went a few inches and stopped. "What the...?" Don pushed harder. The door would go no farther.

"Here, let me," the patrolman offered. Putting his shoulder to the door, he shoved against it, hard. No luck. "Seems there's something wedged in behind the door," he said.

All Don could think was that Miss Carter had fallen and lain there at her back door for days. "You're a lot thinner than I am. Can you slip through the opening?" he asked the policeman.

"I think so," was the reply. Sure enough, he managed to wriggle through and promptly announced the barricade was nothing more than a large sack of lawn fertilizer that had somehow fallen over and become wedged against the back door. "But there's another problem," he said. Shoving the sack aside, he swung open the door to display another locked door facing them.

Don picked open the Kwikset deadbolt in a jiffy and opened that door. To his dismay, he had merely managed to get them into the locked garage. The two doors they had already passed through were merely an outside storage room. Facing him remained the back door to the house itself, and it was secured with a Schlage knob-lock like the one he'd passed up on the front door.

Once he'd picked open that lock, he eased open the door and called, "Miss Carter? Are you in there?" There was no answer.

"We'll take it from here," the policeman announced with authority.

Don was all too happy to give him that privilege. He packed up his tools, located drivers of the various emergency vehicles that had him blocked in Miss Carter's driveway. Then he eased his service van through the curious on-lookers and made his way back to the store.

During the course of his busy morning, thoughts of Miss Carter's flitted through his mind from time to time. Then the women's brother, John, came into the store to have some keys made. Not sure of the fate of the woman in question, Don was a bit hesitant to broach the subject, but his curiosity got the better of him.

"Is your sister all right, John?" he finally asked the man.

"Which one? Ellie hasn't been all right in years," John said, a twinkle lighting his eyes. "But we've learned to live with that. June's the only sensible one in the family," he admitted. "But even she is beginning to get a bit forgetful."

"Ellie called me this morning to let her into June's house. She said June didn't answer her phone or the door, something about their having made plans to go shopping together."

"I heard about that. In fact, I just came from the house. Quite a commotion over there," he chuckled. "The thing is, when they finally got inside and stomped around looking for June, nobody was home. Knowing her, there's no telling where she is."

"Then you're not worried?" Don asked.

"About June? Naw. She's 76. I figure she's plenty old enough to look after herself."

Later that day, who should come into the store but June, herself.

"I sure am glad to see you, hale and hearty," Don admitted to her with a smile. "You gave us all a scare, this morning."

June stared at him blankly. "What do you mean?" she asked.

"This morning, when Ellie called me to let her into your house. Everybody was a bit concerned that you were ill or had met with foul play. The police and EMS caused quite a stir in your neighborhood, I'm afraid."

"I don't know what you're talking about," she said.

"Ellie was concerned. She said you were supposed to take her shopping, or some such."

A look of sudden horror washed over June's face. "My word," she said, "was that today? I completely forgot. I went walking, early this morning, and I stopped in at a friend's for coffee. I guess I'd better call Ellie and apologize. Could I use your phone?"

"Sure," Don replied.

"On second thought, maybe I should wait until I get home. Knowing Ellie, she probably called in the Texas Rangers, by now. I may want to spruce up a bit, in case that good-looking Walker fellow is on the case." With a smile, June gave her silver hair a little pat and sashayed out the door. TNL

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Patio Door Locks

by
Tom Seroogy

1. The majority of patio door strikes are no match when it comes to prying. Even some of the heavier strikes succumb to the enormous forces of a pry bar. This type of forced entry is fast, easy and quiet.

2. Using a pry bar, a patio door is easily lifted from the tracks and removed. Entry is fast, quiet and almost damage free.

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O.K. LOCKSMITHS. QUICK. WHAT ARE THE THREE MOST COMMON MEANS OF ENTERING THROUGH A LOCKED PATIO DOOR?

If you said "Prying, lifting and breaking the glass," you're absolutely correct. And to demonstrate just how it's done, we've employed our own burglar. Then, following our demonstration, we show some locks and techniques that can be used to make such entries harder.

Due to the light structure of most sliding patio doors and their locks, entry can be gained by simply applying pressure to the lock and strike area by prying with a large screw driver or pry bar. This means of entry is fast, easy and, in most cases so quiet it is almost undetectable. While several styles of strikes and locks are applied to these doors, the strikes are typically very light. Even some of the heavier strikes are little match for a crow or pry bar. *(See photograph 1.)*

Probably the all-time most popular remedy for this type of entry is the old broom handle in the track. While there's no doubt as to the effectiveness of this method for preventing a pried opening, it falls short in protecting the door against being lifted.

Like prying, lifting is quick, simple and noiseless. Because most homeowners are not familiar with the makings of a patio door, they don't realize that the door is lifted and dropped onto the sliding channels of the doorway. And, by design, what goes in can come out. Just as they are lifted into place, these doors are just as easily lifted out of place. Even in the closed position, although a bit more

3. Properly position the lock and mark the door for drilling.

4. Carefully drill the mounting holes.

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5. Using the bolt to mark the top frame for a strike hole.

difficult, the door can be removed from its tracks.

For the burglar, access is made by placing a crow or pry bar under the door and lifting the door off its track. Even the heftiest of broom handles won't prevent this type of entry. Again, except for the strike and the lock, very little damage occurs. *(See photograph 2.)*

It should also be noted that patio doors are manufactured with either the sliding door on the outside or on the inside. Those mounted outside are the most prone to prying and lifting, and are the hardest to protect.

What about just breaking the glass and walking through the opening? To say that burglars won't break the glass because of the noise is a fallacy. The common misconception is that breaking the large pane of glass from a patio door is so noisy that doing so alerts the residents or neighbors. Realistically, however, the effect of tempering causes this glass to crumble into small pieces, and breaking is often very quiet.

In one instance, as an apprentice, this writer broke a patio door window with the new residents quietly talking in an adjacent room. The shattering of the glass was so quiet that they did not know it was broken until I informed them. It's even more unlikely that it can be heard while sleeping or by a next door neighbor.

6. After correctly positioning the guide, mark the door for drilling.

At this point, about the only way to offer some protection to large areas of glass is by providing an application of safety film. Offered by a few manufacturers, these films make it difficult to penetrate an opening by breaking the glass. Generally it is not

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feasible for a locksmith to do this type of installation, but money (or at least, good will) can be achieved by referring your customer to a qualified installer of such films. One company that you may contact with questions on safety films and film installers is Courtaulds Performance Films at (800) 255-8627.

For the locksmith, we are still armed with locks and techniques for deterring prying and lifting. In the case of the door that was subject to our burglar, we applied the Octopod by Major Manufacturing. The Octopod, as well as several other brand locks, when properly installed provides protection from both prying and lifting. One of the nice features of the Octopod is that is utilizes a mortise cylinder lock, allowing the lock to be placed on just about any keyway.

In our installation we used a thumb turn. This was done to avoid the need for a key to open the lock during an emergency and for convenience. The disadvantage with this application is that without the positive and negative locking of the pin tumblers in a standard lock, a hard blow to the lock, door or bolt may, in some instances, cause the thumb turn to release and allow the bolt to drop to the unlocked position. Also, this application cannot be used if an extra bolt or strike hole is being drilled to allow venting.

The installation of this lock is extremely simple and fast. After assembling the lock, tightly close and lock the door using the existing lock. This makes sure that it is in the fully closed position for mounting the Octopod.

Place the Octopod on the latch side door stile, allowing enough height for the bolt to engage and disengage the header or upper frame of the door when it is locked and unlocked. Holding the unit onto the door, mark the mounting hole locations. *(See photograph 3.)*

Carefully drill holes for the mounting screws. Be extremely careful. Remember that the glass extends back into the frame up to 3/4". If you're drilling too close, even nicking the glass with the edge of the drill will cause the glass to shatter. *(See photograph 4.)*

Mount the lock to the door. At this point, either the bolt guide can be attached or the strike hole can be

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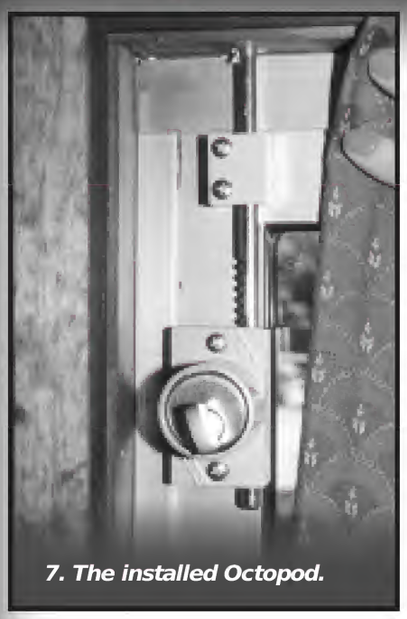


7. The installed Octopod.

marked and drilled. We decided to mark and drill the strike hole first. To make the mark simply thrust the bolt up into the door's header or top frame. A gentle tap on the bottom of the bolt allows the marking tip of the bolt to leave a nice, clearly visible mark on the surface of the header. *(See photograph 5.)*

With the hole drilled, we fastened the bolt guide to the door. Location of this component is critical. The guide is to be set as close to the top frame as possible to prevent lifting the door out of the track. On the other hand, the top frame of most patio doors are not level across the width of the door. In fact, most older doors can have sags at the middle of the door up to 1/2". Under such conditions, the guide may clear the frame while the door is shut, but hit the frame as the door is opening.

To properly set the guide, hold it against the door at the highest position possible when the door is closed. Then, while holding the guide, slowly open the door to the full open position. If the guide hits the upper frame anywhere across the opening, it must be lowered.

Continue to hold the guide against the door and move the door to the position where the upper frame is at its lowest point. Set the guide approximately 1/16" below the frame at this point and mark the door for drilling the mounting holes. *(See photograph 6.)*

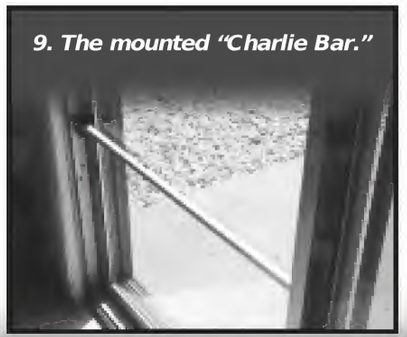
Drill the holes and fasten the bolt guide to the door. Open and close the door, checking for proper operation and clearance. If desired, as second strike hole can be drilled, allowing the door to be locked open just enough for venting. *(See photograph 7.)*

If some applications it may be necessary to shim the lock to clear various style door frames and trim, shims are available to raise the Octopod lock and guide away from the door. The Octopod is available through authorized Major Manufacturing distributors.

Next, we cover the least a locksmith should do to prevent prying and lifting. The door used for this application is an outside slider, one of the more difficult type of doors to protect. *(See photograph 8.)*

To deter prying, we used the locksmith's version of the old broom handle - the "Charlie Bar." This unit is inexpensive and easy to install. After cutting to length, our unit was fastened to the door and ready to go in under 15 minutes. *(See photograph 9.)*

8. An outside slider - one of the more difficult doors to protect.

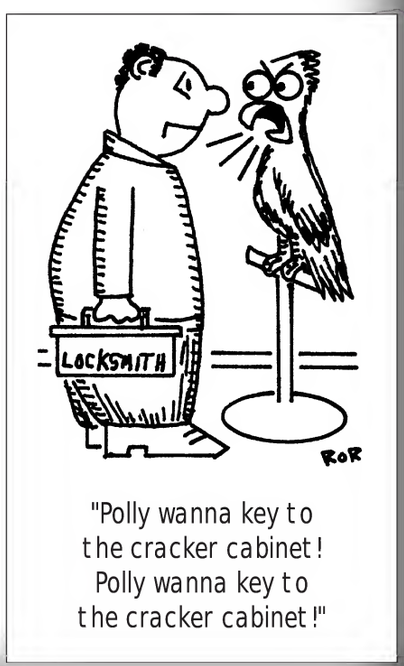


9. The mounted "Charlie Bar."

10. Adding screws along the upper inside track helps prevent the door from being easily lifted.

Of course, also like the old broom handle, the Charlie Bar does not protect against lifting. So, we need to add another level of protection. In this application, we simply added several large flat head screws to the upper track. *(See photograph 10.)*

Three of these screws were added to the track, across the entire opening - one on each end and one in the center. The screws, 3-1/2" in length were fastened into the header, and then lowered to where they just cleared the door. Because the center of the upper rail on the door is hollow, we made sure that the bolt and its head were off to the side. Here the screws ride directly above the edge of the upper door rail, and prevent it from being lifted. TNL



"Polly wanna key to the cracker cabinet! Polly wanna key to the cracker cabinet!"

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Safe Repair Made Easy

Getting into a safe is only part of the job. Repairing what's left can be equally as important -and profitable.

By: Garry Guinn

Most all safe articles written have to do with opening a "locked out" safe using various techniques, depending on 1) the particular reason for the lock out, 2) tools available to the technician, and 3) experience level of the technician.

Of course, after we solve the lock out we are instructed to "put it back together," make out our invoice and collect our big bucks fee. Presumably, we will be smiling all the way to the bank; After all, any technician worth their salt would have been done with five or six jobs before the Monday night football game ever begins. Sound unrealistic? Not in the "industry rags" it's not.

Only one thing is missing in the previous scenario, however. Who repairs the safe and to what degree of proficiency? Unless you've been hired by another in the industry to only open the safe, you make the repairs. Here's my opinion on some proper ways to repair drilled holes in safes. But first let's get the job.

When quoting a job for opening and repair, you most likely will be quoting against other companies. At this stage, assuring the potential customer that you will guarantee (how some in this industry despise that word) the repairs of the hole to be as good or better than the security of the original and that the repair site will be completely undetectable, can't hurt your chances of being the one selected for the job.

This does not mean that drilling an over-sized hole after the safe is open and slamming in a couple of ball bearings or a taper pin is unprofessional. If done correctly it certainly is not. I merely emphasize that if the repairs are presented properly, you may very well convince the customer of your professional techniques and secure the job for yourself.

This is written only to give you some insight in another way to approach the job of perforation repair. This article will only deal with repairs to the common burglary safes with wall/door thickness of 1/4" to 1" steel, not including TL rated units.

First, let's assume you have opened a "C" rate door under the dial. Typically the door will be 1 " thick with an additional 1/4" thick hardplate. We will assume the lock is to be replaced, and we have drilled, using a 1/4" carbide tipped drill bit to penetrate the hard plate. We also do not have a welder to use (more on this later). We will be using Allen head set screws which are harder than the mild steel door, and chrome plated ball bearings. Your local bearing supply house can advise you of the hardness of the various bearings available (I use Rockwell C scale #60).

First tap the hole down as far as you can (don't run your tap into the hardplate) with a 5/16"-18 tap. This will be a good tap size, since your hole will be approximately .265" in diameter. Be sure to clean your threads of any oil or don't use any oil when you tap. With a good quality tap you can get away without using oil. After coating the threads with an epoxy designed for use with metal (Duro, Master Mend Epoxy for metal is a good, readily available product), insert a 5/16"-18 x 3/8" set screw also coated with epoxy. Follow the first set screw with a 5/32" ball also coated with epoxy, the ball will fit into the head of the set screw. Do the same with the next set screw. The last set screw should then be tightened into place and ground smooth. *(See photograph 1.)*

Usually there will be grind marks on your door which can be covered by mixing a small portion of plastic filler. Bondo will work, we are testing a new product, not yet released for marketing. This particular product is supposed to offer better qualities for the safe repair expert, but we won't know until after a bit more testing by notables such as Carl Cloud and Dave McOmie. Until then, try the Bondo or other type filler.

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1.With the filler hardened, apply contact paper or masking tape to mask off the area to be painted.

Patch the front of the door then put a dab in the hole of the hardplate, insert a 1/4" ball and finish filling the hole. After picking up our opening tools and making out our invoice we should be able to file and sand smooth the filler material. The new product sets hard in six minutes, should not shrink or pull out and can be sanded to a feathered edge.

I recommend purchasing two "paint pens," available at hobby and craft stores (Testors - All Purpose Paint Marker pen in the 1/3 fl. oz. size is excellent). One should be flat black and the other should be gloss black. If you want to make a perfect circle, apply a few 6" squares of vinyl contact paper over the dial ring area. Then use a circle cutter inserted backward into the spindle hole to cut a circle slightly smaller than the dial ring. If contact paper is not available, masking tape works fine too. *(See photograph 1.)*

Using the flat black pen, paint the entire area. Although the paint dries rather quickly (approximately five minutes, I sometimes hasten the process by using a common hair dryer. After the paint is dry, dot the area with the gloss pen. What's amazing (assuming that you did a reasonable job with the filler), is that with a flat background and glossy dots, the human eye is not able to detect any imperfections in the surface.

Be sure that your customer sees the repair site before you re-install the ring, so they can re-assure themselves that they did indeed select a true professional to do the job!

Now let's look at another door repair. On a 1/2" door with 1/4" hardplate, simply drill your hole out to 5/16" diameter by 5/16" deep, then insert a 5/16" ball bearing. *(See photograph 3.)* Peen the hole with your center punch (so the ball cannot be sucked out), follow by grinding the door. Repeat this on the inside of the door, then fill, sand, paint. This is a variation of the previous method. *(See photograph 4.)* As you can imagine, repairs done with ball bearings and screws can be effective on a wide range of safe repairs.

2. Paint the background in flat black and speckle in gloss black.

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3. Drill out the holes, fill with bearings, then peen the hole to prevent the bearings from coming out. This shows both the outside and inside of the door.

4. Fill the holes with filler, sand and finish the safe.

I use a number of different bearing sizes, 1/8", 5/32", 3/16", 1/4", 5/16", 3/8"7 7/l 6" and 1/2"; along with Allen head set screw sizes, 1/4", 5/16", 3/8", and 7/16". The 5/16" set screws are used most often, therefore, I stock lengths of 1/4", 5/16" and 3/8". As you will discover, these supplies are readily available at a very low cost.

While some safemen prefer to break a tap off in the hole (at about $4 for a cheap bit), the cost difference in using bearings and set screws is much more attractive to me. And should you ever need to redrill the safe through the previous repair, it is much easier while maintaining or exceeding the standards for the safe. Still, to make a point, there are as many ways to repair a safe as there are technicians.

Next time we'll cover safe repair using the welder. TNL

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THRU THE KEYHOLE

A Peek at Movers & Shakers in the Industry

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Why A Name Change For LSDA?

LSDA created a new corporate name to lead them into the 21st century. The new name is IDN, International Distribution Network.

Our new Corporate name better defines who we are and where we are located. Our former name did not adequately define our geographic coverage and with an aggressive expansion plan this is important to us. Also, we spent too much time trying to explain the difference between our LSDA product line and our corporate name.

We've incorporated our corporate name into our regional marketing names:

Former Name	New Name
Acme Wholesale Distributors	IDN - Acme, Inc.
Armstrong's Lock & Supply	IDN - Armstrong's Inc.
Canada Lock Products	IDN - Canada, Ltd.
Hardware Sales and Supply	IDN - Hardware Sales, Inc.
H. Hoffman Company	IDN - H. Hoffman, Inc.
M. Taylor Company	IDN - M. Taylor, Inc.

IDN has two primary programs that we focus on in servicing the Locksmith industry. First, a network of stocking warehouses which serves the purpose of getting inventory closer to where it is needed. We realized many years ago that our most successful customers were investing in people, service vehicles, and training. They did not want to tie up their capital product. Second, we created a marketing tool for locksmiths to help fight profit margin and market erosion. That tool is LSDA, (the product line) a line of products sold only through Locksmith Dealers.

Why Does IDN Have An LSDA Product Line?

More than a product line, Locksmiths needed a marketing tool. Many years ago we realized that if the locksmith was going to not merely survive but thrive, he would need a product label exclusive to his market that was competitively priced. Thus, LSDA was born.

LSDA (Locksmith Dealers of America) is a line of security products sold only through locksmiths. Hardware Stores or other retailers that do not employ locksmiths cannot purchase this product line. This is a product line sold exclusively through Locksmiths.

It is priced so that the Locksmith can compete with Mass Merchants.

Most importantly, LSDA was created to give the locksmith a marketing edge.

Here is a typical example of how LSDA has helped time and again in retail locksmith setting:

A potential customer comes into your store asking for "cheap" security. He flashes a local Hardware Super Store ad in your face.

You, the locksmith cannot buy at the same level as these Super Stores so you cannot meet their prices.

With LSDA you can offer them a product that is similarly priced an in many cases, better quality.

Your reply to this customer should be.....

"If the price is your main concern let me show you a Grade 3 LSDA knoblock. We are priced about the same but this LSDA lock may offer you some additional features that you may want."

"Before I tell you about the product, why don't you tell me what type of security you need so that I can recommend the product that will best fit your needs."

After accessing the customer's needs, you can then offer him a national brand or an LSDA branded product.

With LSDA, locksmiths can show their customers that they are the source for security advise that the mass merchandiser does not provide and a supplier of fair priced products that fulfills their customers needs.

LSDA has an extensive line of Locksmith Products.....

Almost 75 percent of our products are made by USA manufacturers. The rest are made by manufacturers we have had long standing relationships with located throughout the Pacific Rim. We believe in the strength of this marketing tool for the locksmith and have developed an extensive product line over the past 15 years. In addition, we have developed many aids to assist the locksmith in using this marketing tool: literature, ad slicks, co-op plan, in-store point of purchase displays and much more to come in this upcoming year.

Remember LSDA is not just a product line. It is part of the Locksmith's first line of defense against the mass merchants and super stores. TNL

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1995 TECHNITIPS CONTEST WINNERS!

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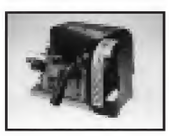
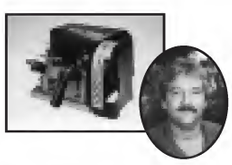
Dennis Harmon (Colorado)
For his tip on how to make a lighted pinning fixture to expedite the repinning of top pins in most types of cylinders. (July)

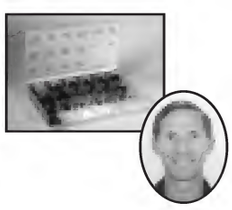
First Prize Winner - HPC's Blitz Machine
Brad MacKenzie (Ohio)
For his progressioning chart for 1995 S-10 ignition cylinders. (May)



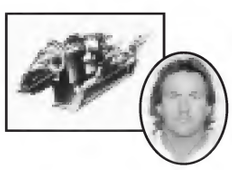
Second Prize Winner - Curtis 1000 Duplicator
Kerry Burke (Washington, DC)
For his tip on removing the door lock clip on an '85 Volvo 200 without removing the door panel. (April)



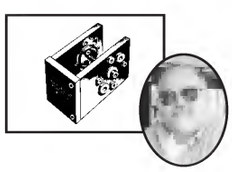
Third Prize Winner - Curtis 1000 Duplicator
Ken Schwartz (Florida)
For his tip for opening imported electronic safe locks. (January)



Fourth Prize Winner - $500 In ASP Foreign Auto Locks
Leo C. Koulogianes (Tennessee)
For his tip on making a series of turning tools and picks for LEXUS ignitions. (December)

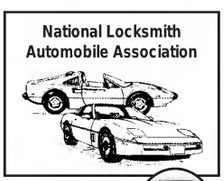


Fifth Prize Winner - Foley Belsaw 200 Key Machine
Todd J. Kerrn (California)
For his tip on opening the key lock of the Maximum brand, imported safe. (February)



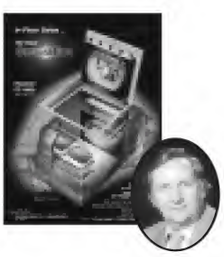
Sixth Prize Winner - Major Manufacturing's Hit-1
Al Zaniolo (Illinois)
For his tip on opening steel framed door without damaging the door. (November)

Seventh Prize Winner - DeWalt DW991K Cordless Drill
William B. Newns, Sr.
(Pennsylvania)
For his tip on making a flip down duplicating index on an Ilco 017 Duplicator for indexing Best/Falcon I-Core keys. (March)



Eighth Prize Winner - One Year Membership In NLAA
Bill Wessel (California)
For his tip on removing a jammed key from a 1995 Mazda 929. (October)

Ninth Prize - Framon Impressioning Handle
Michael Ainsworth (California)
For his tip on drilling a restricted keyway mortise 3723 cylinder to open the lock without destroying the plug. (June)



Tenth Prize Winner - Hayman FS4000 Fire Safe
Tom Gallian (North Carolonia)
For his tip on making a finger saving breaker bar for lifting safes, from a regular crowbar. (April)

15 MINUTE SAFE OPENING TECHNIQUE

Eleventh Prize Winner - Fifteen Minute Safe Opening Technique
Jay Christie (North Carolina)
For his Ford Aspire progressioning chart. (August)

CONGRATULATIONS AND THANK YOU ALL FOR YOUR ENTRANCE IN THE 1995 TECHNITIPS CONTEST.

NEXT MONTH LOOK FOR THE NEW LIST OF PRIZES FOR 1996!

TECHNITIPS

Helpful hints from fellow locksmiths

America Online: NATL LOCK
Use the above address if you are on AOL.

Internet: natllock@aol.com
Use the Internet address if you are not on AOL.

Send in your tips and win.

by Jake Jakubuwski

HOW TO ENTER
Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: *Jake Jakubuwski, Technitips Editor,* ***The National Locksmith****, 1533 Burgundy Parkway, Streamwood, IL 60107 or send your tips via E-mail to the E-mail address posted in the upper right hand corner of this page.* So get busy and send in your tips today. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1996? Enter today! It's easier than you think.

BEST TIP OF THE MONTH
If your tip is chosen as the best tip of the month, not only do you win the All-Lock A-6200 Auto Service Kit, but you also automatically qualify to win one of the many excellent year end prizes!

EVERY TIP PUBLISHED WINS
Yes, every tip published wins a prize. If your tip is printed, you'll win $25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, be ready for Jake's Grab Bag prizes! Remember, everyone wins. (Please remember to include your complete mailing address - we cannot mail prizes to P.O. Boxes.)

These Prizes Awarded Each Month!

- All-Lock A-6200 Auto Service Kit
- American Lock & Supply $50 Merchandise Certificate
- HPC Pistolpick
- Sargent & Greenleaf 4400 series safe deposit lock
- Silca Keyblanks (100 Blanks)
- Major Mfg. Products
- Sieveking Products EZ-Pull GM Wheel Puller
- Pro-Lok PK15 Professional Lock Pick Set
- The Sieveking Auto Key Guide
- Tech-Train Training Video

Hey, Y'all!

Happy New Year! All of us here at The National Locksmith want to wish each of you the very best for 1996! There's going to be a lot of excitin' things comin' your way from your fa-vor-ite magazine this year, so y'all get ready, heah?

I know a whole passel a' locksmiths that are goin' to start their New Year off jes' dandy-like. You jes' need to take a look at the year-end prize winners list for 1995 to see what I'm talkin' about.

The neat thing was that them folks got all them great prizes by writing down an idea and sendin' it to me to print in this here column. Nothin' to it. Not only did the year-end winners get a great prize to help kick their New Year off, they also received a prize the month their tip appeared and got some Locksmith Bucks to spend on books and merchandise from The National Locksmith.

Now, here we are startin' a brand-new year and another 12 months of the Technitip column. That means that you (Yes! You!) get another chance to become a winner. All you gotta do is send me a usable idea and you're gonna get - at the very least 25 Locksmith Bucks an' a neat pair of folding pliers that have screw-drivers and awls and all sorts of tools in the handle. Now, what d'ya have to lose?

On top of all that, you could win one of the great monthly prizes we give away, or a grab bag prize, see your name in print and qualify for the 1996 year-end drawing!

I know. I know. You've been intendin' to write down that great ideah you had while doin' somethin' or the other and jes' plain never got around to it. So, do it now! And you can help me make the 1996 Technitip column bigger an' better'n ever.

Last year, more'n a gross of locksmiths got thousands of dollars worth of Locksmith Bucks, machines, code books, drills, pinning kits, service kits, jackets, safety deposit box locks, pistol picks, pick sets, key blanks, how-to-books, gift certificates and tools - and it didn't cost them no more'n the time it took to write down their tip and the postage to mail it to me. Shucks! Now you can even E-Mail me them tips. Jes' make sure to include a delivery address so I can send y'all your prizes.

An' by the way. Me, an' my wife, Christie, want y'all to have a happy, prosperous an' healthy 1996. Y'all heah me, now?

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All-Lock A6200 Chrysler Pinning Kit
Hide A Key

A local church contacted me about putting a lock box on the outside of the church so a dozen or so of the deacons could have access to the church's master key.

For some reason, the powers-that-be did not want to issue master keys to each deacon and yet wanted them to have ready access to one. Consequently, they asked me about installing a lock box - like realtors use - on the outside of the church.

I advised them that a lock box such as the one they were contemplating using could easily be broken into and I recommended that they consider a small floor safe that was modified to withstand the elements. They rejected that idea because of budget constraints and wanted to know if I could find them an alternative answer to their problem that would not be too expensive.

So, I came up with this simple "Poor Man's" outdoor floor safe that gave them more security then a lock box and was less expensive then a standard floor safe would be. As it turned out, it will probably give fewer problems over the years then either of the others would, since this safe is constructed of some inexpensive pipe, threaded cap, a pipe flange, a couple of lag bolts and a Master Pro Series Padlock and a couple of hundred pounds of concrete.

We chose, as a site for the safe, a corner wall that was sheltered from the most direct weather, dug a hole and installed my poor man's safe. Illustration one shows how I used a 2' length of 8" pipe, etc. to make this special outdoor Key Keeper.

The nice thing about using pipe, etc. to construct this unit is that a crook looking for a way into the church could easily mistake my Poor Man's safe for a fuel-oil filler tube, a meter of some sort or any of several utilitarian plumbing, electrical or filler tubes. Best of all, the church got what it wanted a secure lock box containing a master key to the premises!

Gary Tsao
California

Editor's Note: Gary's tip shows a lot of initiative and ingenuity. Going that extra little bit to help a customer solve a problem like Gary did, is what turns occasional customers in to long-term customers. By the way, Gary, thanks for the excellent and clear drawings!

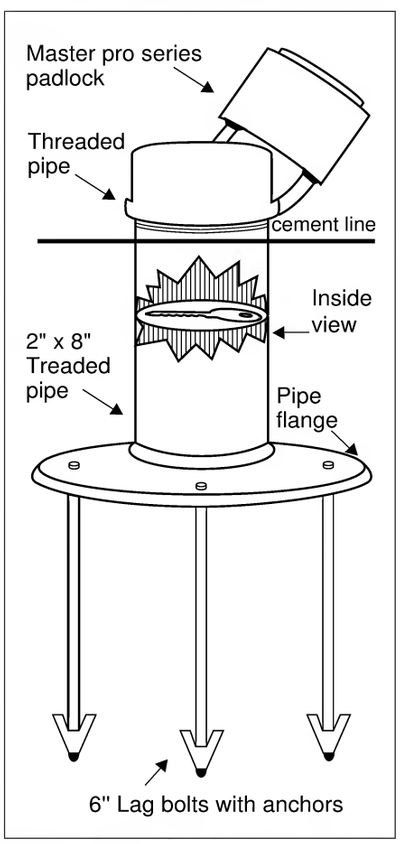

Illustration 1

American Lock & Supply $50 Merchandise Certificate
Ford Ignition Switch Repair

I have had numerous service calls for Ford automobiles (Mostly, 1990 to 1993 T-Birds, Lincolns and Ford Escorts with the 10-Cut ignitions) where the customer complains that the key "flip-flops" in the ignition, but the car will not start.

What causes the problem is not found in the ignition cylinder but in the ignition case housing which is at the end of the actuator rod in the steering. *(See illustration 2.)* The upper part of the case, or housing, is made of pot metal and the lower part - the electrical contact housing - is made from a plastic material. These two components are held together by crimping four tabs on the upper housing over the four corners on the plastic portion of the switch to which the wiring harness is connected.

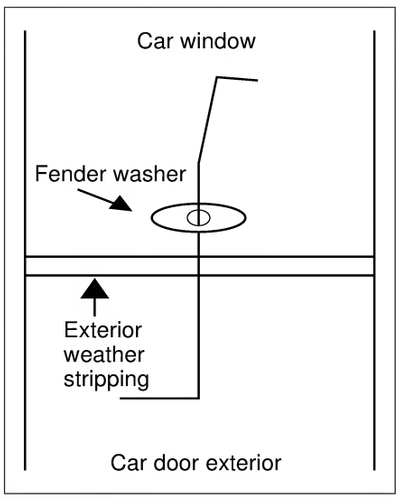

Illustration 2

On most of these units that I have serviced, the tabs on the upper housing that are closest to the steering wheel have come loose and allow the two parts to separate, thus preventing the car from starting. And, since the actuator rod is not engaging with the switch, the key does nothing but flip-flop. The fix is generally fast and easy. Here's how I do it:

First disconnect the battery. If you don't you could blow the main 80 amp fuse. On Ford Escorts and most other smaller Fords, drop the plastic steering column shroud - the switch is located higher up on the column than it is on most T-Birds, Lincolns, etc. where the switch is usually located closer to the floor on the column.

Make sure the switch is in the OFF position.

Align the plastic switch housing with the upper pot metal housing and secure the two parts with electrical cable ties (The locking type).

Make certain that the components are in proper alignment and use a small jeweler's type hammer and small punch to gently tap the tabs back into place. If possible leave the cable tie in place for extra holding power.

After making the repair, try the key for smooth operation before reconnecting the battery. Then try the key again to make sure everything works as it's supposed to.

Re-install the shrouds and you're done. The repair usually takes me about 20 minutes to effect.

Michael E. Shearer, CRL
Illinois

Continued on page 106

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Continued from page 104

HPC Pistol Pick

Residential Steel Door Repair

Nearly everyday, I seem to run into more and more steel doors in new or remodeled homes. I have been encountering a number of problems when installing locksets in these doors because of the way the doors are made.

The doors are not actually steel, but rather a wood frame (the stiles and top and bottom rails) that is foam filled and sheeted with a very light gauge metal sheeting. There are two designs that I have worked on where the rails tend to split when installing screws or there is not enough wood to allow proper mortising for the latch without splitting the stile. In fact, I've even had stiles split when I tried to mark my mortise with a mortising tool.

On some of these doors, the stiles are only 1-3/8"x1-1/2". You will find some where the sheeting comes all the way to the edge of the stile and others where it stops just about 1/8" or 3/16" from the edge of the door. This type door can cause real problems with mortising since there is usually less than 3/16" of wood left on either side of your latch mortise.

Another problem I encountered has been with cutting the cross-bore holes. If the door has a 2" or 2-1/2" stile, cutting the cross-bore hole is fairly simple. If, on the other hand, the stile is under 2" wide, as your hole saw penetrates the sheeting, it can easily bind and cause the sheeting to distort. And, that can happen no matter how carefully you try to cut your hole.

Consequently, when I come across this type door construction, I explain the potential problems to my customer and tell them that the only way I will install a lock on that particular style of door is if they agree to allow me to install a M.A.G. Install-A-Lock, or a M.A.G. Uniforce. Of course, I point out that the addition of either of these products will substantially increase the overall strength of the door as well as help prevent installation problems.

However, even with the Uniforce, I have had occurrences where the stile has split (even after drilling a pilot hole) when I have run the screws in the edge of the door. By drilling 1/4" holes at each end of a split and with a little epoxy, a little sandpaper and some paint the door repair is complete.

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I hope this information helps another locksmith avoid problems with these doors. Mainly, just be careful and keep your eyes open since you can get into a bad situation with these types of doors very quickly. Believe me ... I know.

Jimmy Sharpe
E-Mail

S&G 4440 Safety Deposit Box Lock
Slot Key Cutting

Having experienced difficulty cutting flat steel keys on the HPC 1200CM, I looked for an effective method of cutting those type keys on my 1200 using the Universal Micrometer Card #58. Here is what I have discovered to make the job go smoother.

1. Set the machine carriage at 0.800", plus one-half the width of the flat steel cutting wheel.

2. Insert the key in the vise jaws with the tip side of the bit of the key against the left side of the cutting wheel.

3. Make the cuts at settings of 0.800", minus the key cut spacings.

To facilitate the use of the 1200CM in cutting flat steel keys, I am forwarding a copy of this letter to HPC, Inc. and suggesting that they produce a Universal Micrometer card that has a Zero position at the 0.800" carriage position of the current Universal Micro-meter Card

Also, I believe that all depth markings below .142" on card number 58 and .103" on Card Number 59 should either be removed or printed in red since the current markings can cause the unwary locksmith to go beyond these limits and cut into the vise jaws of the machine.

Jack D. Boswell
Kentucky

Editor's Note: Jack, you have already received a response to your suggestions from Alan Goeke, VP of Operations at HPC. In his letter to you, he recognized the validity of most of your suggestions and told you about HPC's new CMRT for red tip gauging that eliminates time-consuming guess-work in slot cutting situations with HPC's 1200 CM. Alan further told you that HPC is currently developing a series of Code Cards for flat steel and safety deposit box keys that uses both a modified red tip gauge and a modified black horseshoe gauge supplied with the CMHT or CMRT

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cards. These new cards and tip gauges should have been available from your favorite supplier by the end of 1995.

Also, I would like to thank Alan Goeke at HPC for responding so quickly to suggestions like the one you sent to me in the form of a Technitip. Everyone out there should be aware that HPC and other manufacturers are extremely interested in receiving valid and constructive feed back from product users about ways to improve their products to everyone's benefit.

Silca 100 Assorted Key Blanks
Car Opening Tool Saver

I was opening a vehicle the other day and the tool I was using slipped out of my hand and dropped down into the inside of the door. If you've ever had this happen to you, I know you can appreciate how I felt. At any rate, I found a simple way to keep this from happening to me again.

I went to the hardware store and bought a couple of flexible, rubber fender washers. The washers were 1" O.D. x1/16" thick and have a hole in the center that is approximately 3/16" in diameter. They cost me 45¢ a piece; which is a cost-effective solution when you consider how long it takes to tear down a door panel to retrieve the tool that is trapped in there.

You can see by illustration three that I slip the fender washer over the upper end of the tool prior to inserting the tool in the door. Once the washer is in place it is practically impossible for the tool to drop inside the door panel. Even if you let go of the tool, the washer will hold the tool in place for you.

If you wish to make your own washers, check the plumbing department where gasket material is sold. I have found the material in 6"x6" sheets and various thicknesses. These sheets sell for about a buck a sheet and you can make any number of opening tool holders in various shapes and sizes out of a single sheet.

John Marske
California

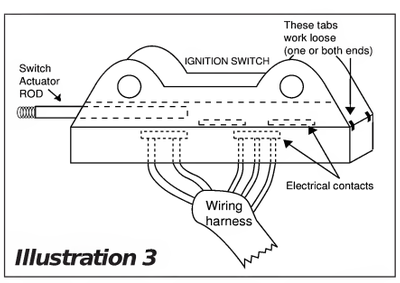

Illustration 3

Major Manufacturing Products Winner
Unseated Key Solution

Normally a locksmith who is competent at impressioning will look at a wafer lock with glee since wafer locks are usually the easiest locks to fit a first key to by impressioning. However, I want you to know that there are wafer locks that can cause you no end of frustration and undermine your confidence in your impressioning ability.

These type locks often have a deeper than normal wafer in the fifth or sixth position. Since that wafer is deeper it prevents the uncut key blank from completely entering the keyway and allowing the shoulder to rest against the shoulder stop in the lock. When that happens, you get good marks, but when you finish the key, it won't work the cylinder.

Most frequently, the difficulty arises when the locks have a nose and dust cover that prevents you seeing whether or not the shoulder has bottomed out. The problem arises when you don't realize that the blank is not all the way in the keyway. The only way to tell if it is is to sort of feel the depth of the key. I guess the easiest way to describe it is to say that the key feels like it is rocking on the tip instead of against the shoulder.

If you suspect this is what is defeating your efforts to impression a key for this particular wafer lock, try filing the usual matte finish; but on the ramp of the blank at the tip! Now insert the key and rock it to obtain marks. If the problem is a wafer stopping the uncut blank from bottoming out, you will see a mark about halfway down the ramp.

Begin filing on this mark. But! Instead of filing downward, file towards the bow of the key parallel with the bottom of the blade. As you file, the key will slide further into the lock and will attain the right feel when the key is all the way in. At that point, go ahead with your normal impressioning procedure until the cylinder turns.

Tom Taylor, CPL
E-Mail

Sieveking EZ-Pull GM Steering Wheel Puller Winner
Slim Jim Sampler

I seldom use a Slim Jim for car openings anymore, but I do keep one in my bag for house openings. Here are some of the tricks I use when I run into difficult to pick door lock.

First, I make a complete walk-around inspection of the house to see what my options are. I look for outswing doors since you can often push those doors in against the rubber insulating seal to allow the deadlock on the latch to slip into the strike. Once that happens, you can often easily open the door with a penknife or small screwdriver. (I might add that I sell a lot of deadbolts when customers see how easily a latch can be loided.)

My next favorite point of entry is at sliding glass patio doors if the house has them. Often the homeowner sticks a piece of wood in the track to keep the door from being opened. That's where the Slim Jim comes in handy. Part the doors slightly with a car window wedge or large screwdriver and you can flip the stick out of the way.

On apartment doors that are inswing doors, I have used a sharp knife blade to part the door stop from the frame just enough to slip the Slim Jim in the crack. Again, by pulling hard on the door, the weather stripping will usually give enough to allow the deadlock to enter the strike and I can then jimmy the door open. Of course you have to repair any scarring or scrapping you might do to the door frame but that's easy enough.

Windows with the old-fashioned sash-type locks are also easy prey for my Slim Jim or a hacksaw blade. Just slide the tool between the rails of the windows and work the lock to the open position.

I really prefer to pick or impression a lock to get a customer in their home or apartment, but sometimes that is not practical. Then, I open the property in the most expedient and least destructive way possible.

And, as I said: these types of entry quickly points out to the homeowner the need for deadbolts, latchguards on outswing doors and locksmith installed patio door locks.

Chuck Donnelly
E-Mail

Pro-Lok PK15 Professional Pick Set Winner
VATS Interrogation

Servicing a VATS ignition without an interrogator could present

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problems for the locksmith. However, I have found a way to do just that. The first thing I did was to acquire a used VATS ignition cylinder plug. I glued a key blank in this plug to facilitate turning and use it as a turning tool to test for the proper VATS code. Here's how it works:

First, after removing the steering wheel (and air bag if so equipped), I remove the ignition from the steering column and let it hang by the wires. Do not disconnect the wires.

Next I insert an uncut blank in the ignition that I just removed from the steering column.

Then, I take my turning tool - made from a VATS plug - and insert it in the ignition housing (be careful not to foul or pull any of the wires), engage the sector gear and turn the ignition ON. If the car starts, I have the right blank in the ignition. If not, I change the VATS key to the next value and try again. When I have the right key in the ignition, the car will start.

All I have to do then is code cut a key on the proper blank and the job is done.

Gene McCoy
Oregon

Editor's Note: If you service a limited number of VATS equipped vehicles each year, I think Gene's tip shows a lot of creativity and has merit. However, if you service VATS equipped vehicles on a regular basis, I believe you should avail yourself of one of the VATS interrogators. One of these interrogators and VATS adapter keys take a lot of guess-work and frustration out of servicing VATS ignitions. And, with the proper tools and equipment there is less chance of creating a problem for yourself as a result of improper service techniques.

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The Sieveking Auto Key Guide Winner
Shim Repair

Here's an idea I have been using for about 20 years to extend the life of my shims and make them work better, rather then throwing the old ones away.

Lay the old shim on a flat steel surface and hammer the shim until it is relatively smooth again. Hammering the edge of a new shim will help improve its efficiency.

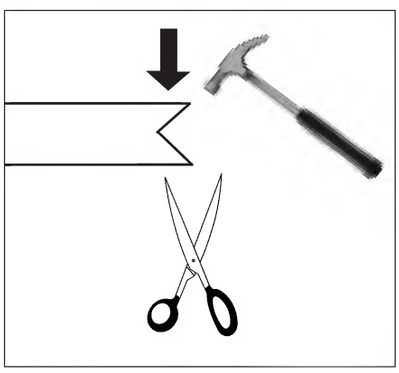

Illustration 4

If your having trouble with shims slipping off to the side as you shim the lock, Use a pair of scissors to cut the end of the shim into a slight cure as show in illustration four. Then, hammer the edge smooth as above.

Now the shim will track straight and true.

Joe Adamo
California

Tech Train Training Video Winner
Finding Master Padlock Combo

The Master Combination Padlock (Model 1520) has a user changeable combination which often results in lost combos. When a customer recently brought one into me, I found a relatively quick and easy way to recover the combination.

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I tied a piece of string (abut 24" long) to the shackle and tied the other end to the work bench. By pulling fairly hard on the lock with one hand, I manipulated the four levers around one at a time until I felt a wheel lock up solid.

For example: the number two wheel locked up at "1." I left it in that position and manipulated the other three wheels until the number one wheel locked up at "3." By continuing that process, the fourth wheel locked up at "1" and the number three wheel locked on "2."

The combination was: 3-1-2-1. It took me about 10 minutes to do this the first time. The only trick I needed to learn was applying just enough pressure on the string to cause the wheels to lock up on the number, but not so much pressure that the wheels locked up on every number.

Donald Shiles
Maryland

Grab Bag Winners
Maxima Opening Method

All of the 1995 Maxima opening information I have read suggest using an Under-The-Window tool. This approach is fine unless the windows are heavily tinted and you can't see inside the car to guide the tool or possibly scratch the tinting.

My approach uses the rear door where the linkage is most accessible. I use Tech-Train's TT1003 tool, but a Z-tool or something similar should work very well.

Begin by inserting a wedge about 6" in front of the smaller rear glass. Insert the short end of the tool (pointing towards the front of the car). When the tool gets below the glass, turn it to the inside of the car. Continue lowering the tool until you contact the top linkage. Bind the tool against the linkage and slide it forward.

Wallace Mink
Tennessee

Change Key Hole Locator

I've seen a lot of locksmiths waste time trying to line up change key holes on a wheel pack they have just serviced. Here's the simplest way I have found to do it.

Take the back cover off the lock case and line the gates up visually. Now insert the proper change key, and slowly and gently (without turning the key and unlocking the wheels) rotate the entire wheel pack until the nose of the key drops into the hole in the case.

If you look at the back cover, the wheels should be in position to accept the change key once the back cover is put on.

Clarence Bennett, CST
Ohio

Across The Car Tool

If you have an old CB whip-type antenna (102" long) tucked away in the garage or basement, why not cut it in two and make an across the car tool and a frameless window tool.

Cut the antenna into one 72" section and one 30" section - with a little bend at each end - these tools will reach across most cars or reach the door lock button of frameless windows.

To put a good bend in one of these antennas, use a propane torch to heat it and Vise-Grip pliers to make the bend. Be sure to dip the end in water or let it cool thoroughly before using or touching.

Len Wagner
Illinois

TNL

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The National Locksmith

The Great Schwab Adventure, Part 1

Ol' Murph had us this time. Tons of drills and hours later and we still didn't have this GSA container open.

by
Jake
Jakubuwski

Okay, you, it's word association time! This is real easy. I say a word and you say the first word that comes into your mind. Y'know, like I'll say, "Money!" an' you might say: "More!". Or, I'll say: "Work!" - an' you might say: "Ugh!". Got the idea, now? Here we go:

Schwab!

"Fire - proof file cabinets!"

No, fair! jes' one word! Let's try it again. Schwab!

"Fire - proof safes!"

No! No! No! Jes' one word! Schwab!

"Media Coolers!"

I ... SAID ... JES' ... ONE ... WORD!!! Let's try it again. Schwab!

"Horse-drawn carriages!"

Oh - ho! Now we got us a comedian in the audience! SCHWAB!!

"Sewer grates!"

Lookee heah, now! You read my lips! S-C-H-W-A-B!!!

1. The only identifying label or mark on this safe is the diamond shaped handle, mounted in the 6-12 o'clock orientation. Many older Schwabs had this handle configuration.

"Coal - stoker systems!"

Okay. I tried to trick you an' it didn't work! You know your Schwab better'n I thought you might. An' 'cause y'do, you know there's jes' no way in this here world to describe Schwab and their high qual'ty products with jes' one word!

Since it's founding in 1872, Schwab has manufactured all of the above plus, a lot of specialty castings and foundry-type items for all sorts of uses and users. However, Schwab's mainstay - since it's beginning - has been safes. And every one of us is familiar with today's line of Schwab fire-rated record safes, media coolers, and file cabinets. But here's a fact you may not have known: Schwab has made a lot of GSA containers ... tough ones! And, on a periodic basis, Schwab continues to provide Uncle Sam with containers when they are awarded a contract. So, keep your eyes peeled 'cause there jes' might be a Schwab GSA container in your future ....

Why'm, I tellin' you that? I thought you'd never ask!

It all started with a phone call from a Post Office in a small community not too far from where I live. "I can't get

Continued on page 114

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SCHWAB CORP. SRi SECURITY RESOURCES INC. STRATTEC ASP HPC Major MANUFACTURING, INC. The National Locksmith

Continued from page 112

my safe open. Can you help?" The first thing I asked was if the safe had a name-plate on it. "No!" With that information and the fact I knew, fair to certain, the safe jes' had to be a GSA container, I told the P. O. manager I could help, but I had to make several calls to rearrange my already "overloaded schedule."

Actually, my hesitation stemmed from the fact that during the eight years or so since I became a locksmith, I had never been called on to open any type of a GSA container! And, although I might, on a rare occasion, rush in where angels at least hesitate to go ... I try not to act too rashly, if I can help it! So, I called my friend Tom Gallian and told him what I had and asked him if he'd be willin' to come up an open this one for me.

"No problem!" says, Tom. "But, I can't get there until around one o'clock!" I told him I'd call him right back. Then, I called the Post Office and told the manager, I could help her, but there just was no way I could get there before one. She agreed to that and I called Tom and tol' him to

2. Close up of the handle.

"Git on up heah!"

And, that friends and neighbors, is how I began my Great Schwab Adventure! Read on to see why the opening of this container turned out to be so adventure-some:

Arriving at the site, there are no labels anywhere on the outside of the unit - other than, "PROPERTY OF THE U. S. POST OFFICE DEPARTMENT" - to give us a clue to its identity. *(See photograph 1.)* On the bottom right caster, there is a plate that says "1,400 Pounds." And, if you look at the upper right-hand corner of the door you can see a label that has the GSA inventory number on it. The only clue to the identity of the safe is the handle which has a distinctive diamond shape at the top portion. *(See photograph 2.)* But, at the time, neither Tom or I could make the connection. 'Sides, who'd think to run up on a Schwab GSA rated container in a 'down-yonder' post office?

The combination lock was an S&G 8400 series, with a DO41 Centispline dial and an R162 Spyproof dial ring. For those of you that may not be familiar with it, this manipulation resistant lock is the one that you dial the combo, bring the dial back to "0", turn the center tab (with "S&G" on it) and continue turning the dial to the right to retract the bolt.

We spent about 30 minutes trying to dial the unit open. We ran the numbers up. We ran them down. We used a dead-blow hammer to try to

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3. Drilling through the side of the dial ring and into the dial.

4. Binding the dial using a drill bit and the hole that was just drilled.

vibrate the fence into the gates (more on why that didn't work later). And, at the end of that time ... the safe was still locked! Then, just to make sure, we did it all over again! The safe was still locked! And here's where the Great Schwab Adventure started in earnest. This is also the point where ol' Murph' came nosin' aroun'.

Knowing that we were going to have to drill to get the safe open, the first thing Tom did was to drill a hole through the side of the dial ring and into the side of the dial. *(See photograph 3.)* Next, he "bound" the dial by using the drill bit to keep it from moving. *(See photograph 4.)* Photograph five, shows Tom using a hole saw to saw off all of the dial except the knurled portion with the tab in the center (You'll need this to make the fence drop, once you line up the gates under the fence). Photograph six shows the dial ring being chiseled off the face of the door. It's necessary to chisel the dial ring off because the spindle is still intact and you can't get the dial ring off any other way.

Dale Libby calls this his "D.U.D.D." method. That stands for: "Direct Under the Dial Drilling." It not only gets you in where you want to be without angle drilling and excess aggravation, it allows you to repair the container with no visible evidence outside the dial ring that the safe was penetrated.

With the dial ring gone, it was time to figure out where to drill our scope hole. Without having a definite knowledge of the lock's handing on this safe, we decided to drill for a

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5. Using a hole saw to cut off the outer portion of the dial, leaving the center knurled portion in tact.

right-hand mounted lock (Murphy snickered in the background). Photograph seven shows Carl Cloud's Learning Unlimited Drill Point Locator set up to give us the drill point for a right-hand lock. We had to slit the locator from the top edge to the center in order for it to fit around the spindle. Photograph eight shows Lockmaster's 357 Magnum in position to start what turned out to be the first of three (You read it right! I said: "Three") holes trying to find the dadgummed fence we wanted to drill off.

Just beginning to penetrate the outer skin of the safe door, we weren't more than 1/4" into the door when the drill revved up indicating we had already hit hard plate. We chucked in a Strong Arm bit, cranked the 357 down and watched the first barrier material come spiraling out of the hole. *(See photograph 9.)*

Now, Schwab has been unable - not unwillin' - to tell me what the composition of this material was (they haven't made GSA containers for nearly 20 years), but I'm inclined to believe that it was a Thermal Barrier to slow down a torch attack. It was hard, but it yielded readily to the Strong Arm bit. However, the ribbon of material came out with tints of red, yellow, blue and black throughout its length. Obviously, it go hot enough to change color, but did not tend to get harder when it was drilled. Then, the drill motor revved up again, and the Strong Arm bit bound and snapped off clean! We had just reached *the* hardplate!

Chucking another Strong Arm bit into the drill, we tried to vary the drilling speed, rig pressure and cussin'. All to no avail ... that bit bound and broke, too! All told we used four Strong Arm bits and got hardly nowhere at all. The only one who seemed to be enjoyin' themselves was my ol' buddy, Murphy. I could almost hear his snickerin' turnin' to gigglin'.

6. Cutting away the dial ring with a cold chisel.

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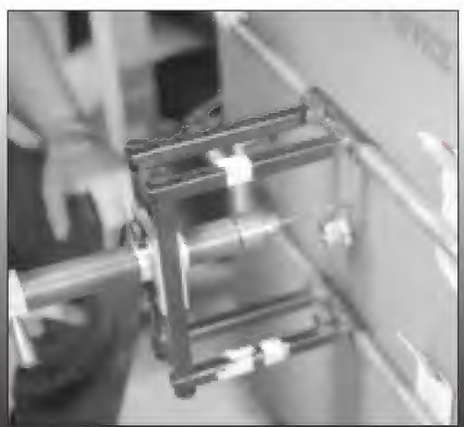
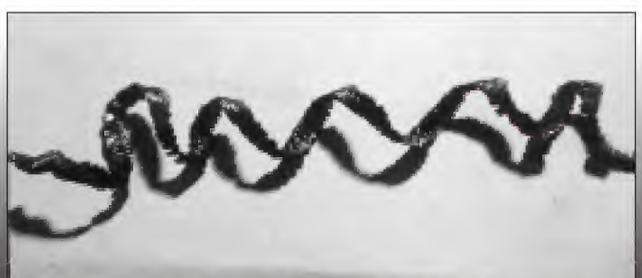
7. Carl Cloud's Learning Unlimited Drill Point Locator.



8. Attaching Lockmaster's 357 Magnum drill rig.



9. The first layer of barrier material quickly fell prey to our drill.

At this point Tom broke out a Diamatip core drill bit (about $40 a copy!). Even with this hi-tech, diamond coated-tipped bit, the drilling was slow. Photograph 10 shows a wad of the wax-like lubricant and hardplate debris that I took out of the core of the Diamatip. The second Diamatip got us through the hardplate and to the back of the lock case.

As it turned out, we were in an excellent position to see the edge of the wheel pack. Unfortunately, there was no fence ... no lever ... no nothin' that we wanted to be in the viewing field of our borescope! We tried looking to both sides of the wheelpack to locate the lever and fence but just couldn't get a clear view of much beyond what we could already see.

Since it was almost five o'clock (That's not a misprint either. The first hole took nearly three hours including set-up time, preparation and scope time!), we decided to take a break and reevaluate our plan of attack. Since the lock was not mounted RH as we had assumed, and given the position of the handle and its distance from the center of the dial, we decided that the lock "jes' had t'be" mounted Vertical Down!

That was another logical assumption since the second most popular mounting for a combination lock is VD! Right? Well, let this ol boy tell you, Murphy musta' really got his jollies on that one! I mean, I'll jes' bet he was laughin' out loud by this time.

At 5:30, we resumed our Great Schwab Adventure and began drilling our second hole. The procedure was the same as the first, except we didn't lose as many Strong Arm bits this time. Part of the reason was that we were using a slower speed on the drill motor and whenever we heard the rev's begin to increase, we very quickly backed off the drilling pressure of the 357. That of course, slowed everything down. By 9 p.m., two Strong Arm bits and another Diamatip bit, we had made our second penetration into the lock case.

Using Tom's halogen generator as a light source for the borescope, we could just barely see the back (!) edge of the lever at the bottom of the lock

10. Hardplate debris.

case! The lock was mounted left hand! No wonder Murphy was havin' such a grand ol time. That's one reason the fence couldn't be vibrated into the gates when I told you we had tried to do that earlier. We spent about half an hour trying to probe the lever into the gates without success. At that point, we decided to call it a day and come back early the next morning and resume our Great Schwab Adventure.

An' if you want to get to the end of the Great Schwab Adventure with me an' find out what made these containers so tough, you jes' gonna have to wait 'till next month. See you then. You heah?

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HPC 1200 CM
Code Card - CF215
Cutter - CW1011
Stop - 1054 Tip Stop (Ford 10-Cut)

Framon
Cut Start - .216"
Cut to Cut - .092", Spacing Block #3
Cutter - FC8445
Key Clamping - Lay spacing clip F2MS552 flat on left side of vice and align tip.

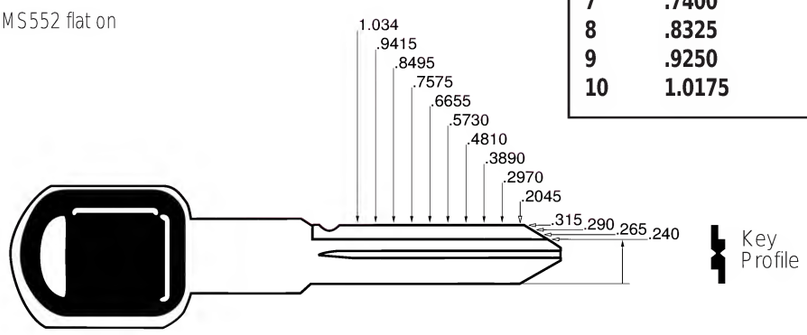
Curtis
Cam - GM6
Carriage - GM6A

KEY BLANKS

B & S	5995936
Silca	GM37(EP)
Curtis	B82
Ilco	P1102
Jet	B82(PH)
EZ	B82
ESP	B82

Spacing and Depths using Universal Micrometer Card #58

	Spacing	Depth
1	.1850	.315
2	.2775	.290
3	.3700	.265
4	.4625	.240
5	.5550	
6	.6475	
7	.7400	
8	.8325	
9	.9250	
10	1.0175	



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S002	2332243123	S028	2334212242	S054	2334243344	S080	2334434223	S106	2334311344	S132	2334242233
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S005	2332132124	S031	2331342124	S057	2334322134	S083	2334332443	S109	2331344233	S135	2332211324
S006	2332212313	S032	2232421343	S058	2334243233	S084	2332423424	S110	2334311343	S136	2332133422
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S010	2331344322	S036	2334313113	S062	2332211342	S088	2342132312	S114	2332113122	S140	2334231243
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S013	2332132434	S039	2334234313	S065	2342133234	S091	2334424213	S117	2332424243	S143	2342112433
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S204	2343243122	S253	2343342342								

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S585	2343243134	S607	2342231123	S629	2344224423	S651	2343223312	S673	2343313213	S695	2343422442
S586	2343344232	S608	2343231132	S630	2343122442	S652	2342442124	S674	2342432112	S696	2342442243
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S589	2344234422	S611	2342421313	S633	2343424424	S655	2343123442	S677	2342442233	S699	2343324433
S590	2342443113	S612	2343323424	S634	2342434242	S656	2343434233	S678	2342442432	S700	2343443132
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S592	2342213444	S614	2343422124	S636	2343321243	S658	2343231344	S680	2343124324	S702	2342243112
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S600	2344213323	S622	2342331212	S644	2343123244	S666	2343323112	S688	2342233134	S710	2343211312
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S605	2343212323	S627	2342343342	S649	2343432242	S671	2343322312	S693	2344233134	S715	2344213423

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S716	2343434232	S764	2342344234	S812	2342433224	S860	2342334243	S908	2343424223	S956	2343131212
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S751	2342242343	S799	2343122324	S847	2342234422	S895	2342423243	S943	2343133242	S991	2343312312
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phone tests, test the system to verify that the central station correctly receives alarm information from your system. At this point, you should also verify that the X-10 Lamp Modules are working correctly.

To test communication with the central station:

1. Call the central station and tell the operator that you will be testing the system.

2. Arm the system.

3. Trip at least one sensor of each type – fire, intrusion, etc. – to verify that the appropriate alarms are working correctly.

4. If X-10 Lamp Modules are installed, check to see that they operate correctly. The lights should come on and stay on during the fire and auxiliary/medical alarms, and flash during intrusion alarms.

5. When you finish testing the system, call the central station to verify that the alarms were received.

The author is Senior Editor at Interactive Technologies, Inc. (ITI), of North St. Paul, MN. For more information contact ITI at (800) 777-5484, fax (612) 779-4879.

The author wishes to thank ITI Technical Support and Technical Publications for assistance with this article. TNL

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INDUSTRY MEETINGS

February 6-11, 1996
Texas Locksmiths Association's Annual Convention and Trade Show. *For Information Contact: Nancy Viaille, (806) 795-7117, Booth Information: Mike Burnett, (409) 744-9588.*

February 10-11, 1996
The 19th Annual West Coast Lock Collectors' Show & Sale, Embassy Suites Hotel, Arcadia, CA. *Contact: Bob Heilemann, c/o Ace Lock & Key, 1427 Lincoln Blvd., Santa Monica, CA 90401 - Evening Phone: (310) 230-3004, or Message: (310) 454-7295 (No Collect Calls).*

February 17, 1996
North Carolina Locksmith's Association, Inc.'s Manufacturer/Distributor Trade Show. *For show information only contact Joe Estridge, (704) 826-8667, Fax (704) 826-8300.*

February 16-18, 1996
North Carolina Locksmith's Association Quarterly Meeting, Charlotte, NC. *Contact: Kathy Stewart, Secretary, P.O. Box 5052, Burlington, NC 27216-5052, Phone: (910) 578-8865.*

February 25, 1996
Bill Reed/Steve Young Seminar, Airport Ramada Inn, State Rd., 84 at I95, Ft. Lauderdale, FL, 9 a.m.-5 p.m. *For more info call: Steve Young at (954) 929-5250.*

March 2, 1996
Hans Johnsen Company Spring Lock Show. *8901 Chancellor Row, Dallas, Texas, (214) 879-1500.*

March 12-15, 1996
The 29th presentation of the International Security Conference & Exposition/Las Vegas. *Sands Expo & Convention Center, Las Vegas, NV, Contact: Customer Service - (203) 840-5602.*

March 23, 1996
11th Annual Midwest Trade Show, Sponsored by the Greater Chicago Locksmith Association. The Olympia Plaza Hotel and Conference Center, 4141 Calumet Ave., Hammond, Indiana. Exhibits 10 a.m. to 4 p.m. *Contact: Kathy Zaniolo, (708) 386-3334, fax: (708) 366-2094.*

Send your press release of events to The National Locksmith, 1533 Burgundy Parkway, Streamwood, Illinois 60107. Attn: Industry Meetings

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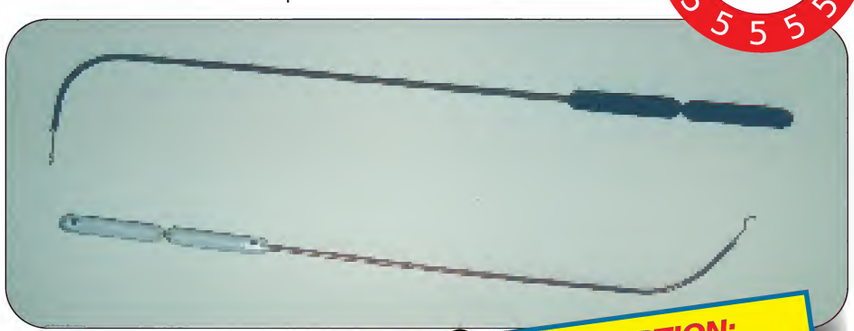
TEST DRIVE

Taking Industry Products for a Spin Around the Block

HPC'S CLUTCH CAR OPENING TOOLS

PRODUCT: The CO-75 Horizontal Clutch™ and the CO-76 Vertical Clutch™ car opening tools by HPC. Available from authorized HPC distributors for a suggested introductory distributor price of $19.50 each.

PRODUCT DESCRIPTION: Breaking the tradition of simple hook tools that catch and bind the linkage, the Clutch tools are designed to actually grasp the linkage much like a finger or hand might. The tool is made up of a stiff wire that passes through a long rigid tube. At the working end of the tool, the wire has a small fingerlike hook for looping the linkage. Gnurled aluminum handles at the top allow the locksmith to pull the wire up the tube, retracting the hook. To use, when the hook engages a linkage rod, the operator pulls on the handle to retract the hook, binding the linkage with the tube.



TEST DRIVEN BY The National Locksmith 5 5 5 5 5

FRIENDLINESS: Like any opening tool, practice is necessary if efficiency is desired. The make up of these two tools offers a slightly different feel than the standard wire style we are used to using. In using wire tools, locksmiths tend to probe the inside of a door by trying to loop and bind the linkage rod with the loop end of the tool.

DESCRIPTION: The CO-75 Horizontal Clutch™ and CO-76 Vertical Clutch™ car opening tools by HPC.

COMMENTS: One of the first truly innovative opening tools since the Under-The-Window tool.

TEST DRIVE RESULTS: Considering the low cost, there's no reason not to own both tools.

With the Clutch tools, there is no binding or twisting to try and engage the linkage rod. Once the "touch" for using these tools is developed - opening any car is basically a no brainer.

FEATURES: As their names imply, each tool is designed to attack a specific style of linkage. This is accomplished by the direction of the wire loop at the working end of the tool. The loop or hook of the CO-75 is vertical in orientation to allow it to grasp horizontal linkage. Likewise, the CO-76 is horizontal for grasping vertical linkage. To make distinguishing the tools easier, the CO-75, used for horizontal linkage, has a silver colored handle. The CO-76 is for vertical linkage and has a black handle.

COMMENTS AND SUGGESTIONS: It's very rare that a tool can be called "unique." But in the case of the Clutch tools, this is certainly the case. The binding method employed by these tools eliminates the pressure on the linkage rod caused by twisting and binding, typical of most tools. This reduces the chance of bending linkage rods and breaking bell cranks or plastic clips that can be caused by twist binding.

The small fingerlike hook makes probing and grasping for linkage much easier and more positive. Slipping once the linkage is grasped is virtually non-existent. In short, the introduction of this tool has raised the professional locksmith car opening to its next level.

Of course, the best part of this unit is the lower cost.

Improvements? It's hard to say now, but the diameter of the tool may be a little difficult to use on vehicles with extremely tight window sashes. A stainless steel tube may allow for a thinner tool that is still rigid enough to do the job. TNL

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